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PEACE OR PIECEMEAL ?

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THE OFFICIAL MAGAZINE of the DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern.

THE DIGEST is published under supervision of the Army Chief of Information to provide timely and authoritative information on policies, plans, operations, and technical developments of the Department of the Army to the Active Army, National Guard, and Army Reserve. It also serves as a vehicle for timely expression of the views of the Secretary of the Army and the Chief of Staff and assists in the achievement of information objectives of the Army.

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SINCE KOREA, while public attention has been focused on dangers of general atomic war, there have been fourteen small wars of dangerous potential in various sectors of the globe. Thus while general war remains as the greatest danger, local aggressions leading to piecemeal erosion of the Free World's position remain as an ever-present threat, for which your Army also must be prepared. This Special Issue considers the many problems involved in the Army's Role in Limited War.

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UNITED STATES OF AMERICA

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JUNE 1958

Volume 13 Number 6

PEACE or P-i-e-c-e-m-e-a-l?

A Special Issue on the Army's Role in Limited War

IN SUPPORT of United States security objectives, the U. S. Army has a three-fold mission:

To deter general war
To deter or win local war
To win general war.

AS THE Nation's front line force, your Army must be prepared to meet a variety of military situations—namely, cold war, limited war, and general atomic war. In this issue, some of the problems of planning, organization and operations attendant on limited war are considered. They form only one aspect of the complex, variegated mission which your Army is prepared to fulfill in maintaining our Nation's security as a bulwark of world peace.

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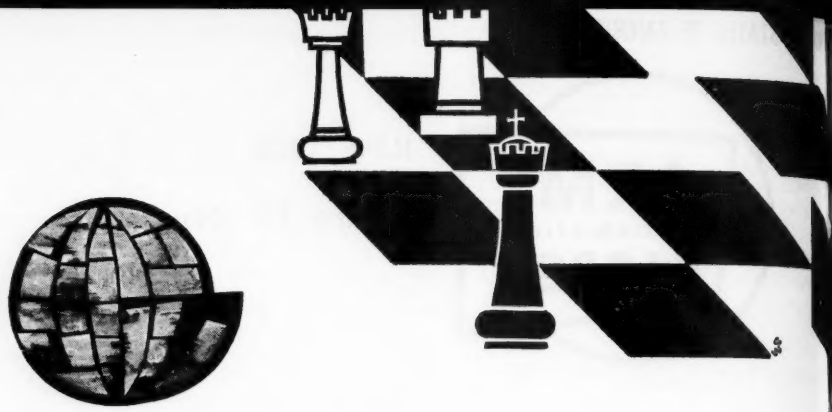


PEACE or PIECEMEAL

SINCE the founding of the Republic, the American people have seen history underscore the far-seeing wisdom enunciated by President Washington before both Houses of Congress on 8 January 1790, that "to be prepared for war is one of the most effectual means of preserving peace."

To this axiom, Americans wholeheartedly subscribe.

But prepared for what kind of war?

Warfare of the 18th and 19th centuries, with its cannonade, musketfire and dashing cavalry charge, was an elementary brand of conflict—simple, direct, easily comprehended—but it is certainly far removed from the atomics and rocketry of the nuclear age.

Just as the means of warfare have increased in range, intensity and complexity, so have the methods. They range through an entire spectrum—from harassment and provocation of the cold war, to the manufactured incident with its pretext for bit-by-bit annexation, to the surprise all-out attack with its all-encompassing holocaust of thermonuclear destruction.

In today's sophisticated era where tensions may be manufactured and incidents made-to-order, the leading exponents of aggression are Communist leaders long skilled in the feints and strategems of the chessboard, and capable of using captive peoples and populations as their pawns.

Recent advances in Soviet military capabilities, as reported in past issues of the *Digest*, strengthen the possibility that Soviet aggressiveness in international relations may be further increased.

PITTED against a Communist adversary who is keenly aware that he can achieve his greatest gains at minimum risk by camouflaged aggression and divide-and-conquer tactics, the Free World is con-

fronted with a basic challenge. It must remain firmly united, determined that any Communist inspired attempt at takeover shall be met with resolute action to resist local aggression.

If past history has demonstrated anything, it has shown that where peace is concerned there can be no vacillation or retreat. Those nations who would overlook piecemeal aggression against neighbors and allies eventually find themselves—too late—standing alone, backs to the wall, fighting for their own survival.

In the present East-West struggle in which both sides possess capabilities for mutual destruction, the Army increasingly must serve as a precision tool to isolate and pinch off, by rapid intervention, the probing tentacles of Communist aggression, wherever they may penetrate. By their very presence U. S. Army deployments help reduce the possibilities of war by presenting clear and convincing evidence that any attack could not succeed, or even be tried without prohibitive cost.

OUR national safety hinges on the ability to prevent both general and limited war—or if prevention fails, to fight and win either kind. In recent years major emphasis has been placed on swift retaliation by atomic forces as a key element in our national security system. Meanwhile, since Korea there have been some fourteen instances of so-called small-scale conventional aggression in the world, any one of which might have required ground forces to prevent local aggression from erupting into widespread war.

WHILE all-out assault against the United States remains as the greatest danger, it is the *piecemeal* loss of the Free World to limited and camouflaged aggression that constitutes the greatest long-term threat to the Nation's security. The Army's ability to react swiftly and decisively in case of a local war serves as an ever-present preventive of the general war.

The Army is, of course, prepared to fight any type of war. Technology has tended to divide modern war into two categories: general and limited. This Special Issue of the *Army Information Digest* considers some of the problems involved in a measured application of Army force as an instrument of national policy for dealing with limited war.

YOUR ARMY'S posture of readiness assures that there will be a clear, affirmative rejoinder to the challenge:

PEACE or p-i-e-c-e-m-e-a-l ?

The Editor

A Statement by The Chief of Staff—

ON LIMITED WAR

A comprehensive bibliography on limited war, compiled by the staff of the Army Library, was recently published as Department of the Army Pamphlet 20–60. In a prefatory statement, General Maxwell D. Taylor, Army Chief of Staff, included these cogent observations on the necessity and importance of Army readiness for limited war as a major deterrent to general atomic war. General Taylor's views serve as an appropriate keynote for this Special Issue on Limited War.—*Editor*

IN THESE days of dramatic satellite launchings and missile flights, public attention is to a large degree focused on the dangers of a possible general thermonuclear war. This concern is understandable, but it may cause us to overlook the equally serious threat of limited wars initiated by an aggressor under the protective cover of mutual nuclear deterrence.

Limited aggression, if not arrested, could lead to the possible loss of much of the Free World, and if not quickly suppressed might spread into the general conflagration, which we hope to avoid. I consider, therefore, that our readiness to fight and win promptly any local conflict is of the utmost importance, not only to discourage potential enemies from limited military adventures, but as one of the major deterrents to general atomic war itself.

Our major concern, of course, is to prevent war. But if the Communists are not convinced that we will fight if necessary our deterrent becomes invalid. If we demonstrate our readiness to use effective force to put down local aggression, it will give credibility to our general war deterrent posture. Thus, while we should never seek limited wars, we must bear in mind the broad significance of our reactions to limited aggressions in terms of communicating our will and determination to the potential foe.

Fundamentally, the United States stands for negotiating

peace in preference to employing military force, and any show of force which prevents war in favor of negotiated peace is consistent with this policy. The clear readiness of our deterrent forces, and our evident determination to employ them if necessary, may enable us to avoid the use of force in either general or limited war.

There is reason to believe that such readiness and obvious determination have prevented the outbreak of war several times in recent years, as in Berlin, the Formosa Strait, and the Middle East. In other cases readiness and determination contributed to the re-establishment of peace without the use of force. . . .

IN STUDYING the problem of deterrence, we must consider carefully the extent to which there is difference, as well as identity, in the requirements for the deterrence of limited war and those for fighting such conflicts should they break out despite the deterrent.

If we are forced to fight a limited war, it is essential that we react promptly and decisively. From the military point of view, this is vital in order to prevent the enemy from gaining momentum, and in order to avoid the expensive and dangerous delays which will be the result of any protracted piecemeal commitment of our forces.

We must determine, in collaboration with our allies, our respective roles in the deterrence as well as the conduct of limited wars. There is an obvious mutual advantage in having allies strong enough in their own right to discourage aggression, and in assuring that they have the capacity to deal with any save the most serious crises which might affect the security of the entire Free World.

At the same time, responsible as we are for our own national security, we and our allies must both recognize that no nation can put itself into a position where its hands are tied when its vital interests are affected. I believe, however, that we and they will be in general accord on the requirements for achieving our ultimate goal of a Free World posture—militarily, economically, politically, and socially—that will prevent all wars.

LIMITED WAR

THE PROSPECTS AND POSSIBILITIES

The Soviets Try Blackmail

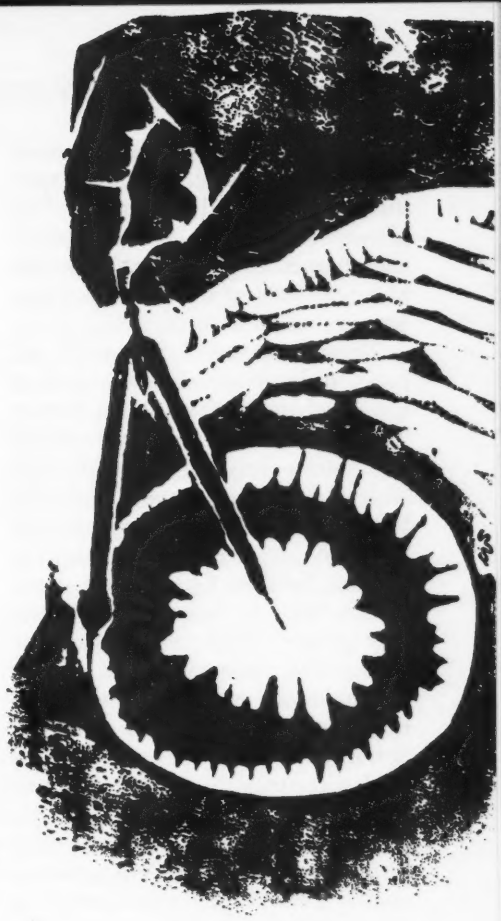
THE Soviets are trying to blackmail the West into inaction by insisting in their propaganda that any local or limited war will inevitably expand into all-out fighting; yet, concurrently, they are strengthening their own capabilities for limited war. The grave danger here is that they may conclude they can get away with limited adventures, on the theory that the West fears to intervene, lest it bring on the atomic holocaust. To accept this Soviet speculative premise would mean that their blackmail has worked. The West would be inviting disaster if it even seemed to hesitate because of this potential miscalculation by the Soviets.

There is no inexorable logic that makes it inevitable that henceforth any war will become total war. Most wars have had limited objectives, and have been limited wars. This was notably true of the Korean War, and it can continue to be true. But there is an essential precondition in sustaining limited operations: maintenance of the strategic reserve. Behind the capability to fight limited war, there must be the capability of fighting total war with every weapon. That's the grim persuader against reckless expansion of objectives and methods.

THE choice the West has is not between absolute safety, and grave risks. The choice is between degrees of risk; and the smallest risk the West can take is to be prepared for any kind of war, anywhere, any time, which clearly means that limited wars must be considered possible, if not likely.

The greatest danger is that a little war will get out of control, and may expand into all-out war. The likelihood of this increases with the length of the conflict. Long continued fighting may cause the political issues at stake to assume expanded, exaggerated significance, and almost certainly will result in whipped up emotional furies. That is the background that gives urgent meaning to General Taylor's statement:

"If we are forced to fight a limited war, it is essential that we react promptly and decisively."



"Modern wars are not internecine war, in which the killing of the enemy is the object. The destruction of the enemy, in modern war, and indeed, modern war itself, are means to obtain that object of the belligerent which lies beyond the war."

General Orders 100, April 24, 1863
War Department,
Adjutant General's Office

IT IS generally accepted that with the power of modern weapons, a war between the United States and the Soviet Union, if waged to its utmost limits, would bring down disaster upon mankind. The growth of nuclear stockpiles, and the development of means for delivering them, have produced a situation in which the deliberate initiation of unlimited hostilities represents an unacceptable course of action for both sides in the prevailing East-West struggle.

However, this has in no way mitigated the character of the conflict. On the contrary, the Soviets give every indication of utilizing their nuclear striking power as a screen behind which to intensify the cold war. There is every reason to expect that the Communists will continue to seek opportunities for expansion.

In this protracted struggle, the take-over by subversion and *coup d' etat* will probably remain the preferred tactic. Failing this, the Communists will not hesitate to employ military power in the attainment of any objective which they consider significant in advancing their objective of world domination.

With no abatement of the cold war in prospect, and because of the disastrous consequences of an unlimited war, the West is faced with a fateful problem. How can Communist expansion, whether by military or non-military means, be thwarted without incurring unacceptable risks?

In many ways, the problem of forestalling Communist expansion by so-called peaceful political and economic penetration is the most difficult challenge facing the Free World. It will require a high degree of ingenuity and skill to outmatch the Soviets in this contest.

Fortunately, this is an area where the West possesses unrivalled spiritual and material resources. The principal need is a recognition of the character of the challenge and a determination to beat the Communists at their own game.

The threat of Communist expansion by non-military means is not unrelated to the military threat. The Communist take-over in much of Eastern Europe was made possible and is preserved only by the presence of military power. Similarly, a Western strategy to counter further Communist penetration must be reinforced by military power which neutralizes the Soviet Bloc military threat. Western influence among many of the uncommitted nations, for example, is not likely to prosper unless there is also security against Communist military encroachment.

The relationship between military and non-military programs becomes even more meaningful in terms of long-term objectives. The containment of Communist expansion is important, but it is not a sufficient strategy. Our ultimate objective is a cessation in the cold war itself.

The minimum precondition for inducing the Soviet Bloc nations to abandon the goal of world conquest is the denial of further opportunity for military expansion. With a military equilibrium, there can be some hope that evolutionary changes will occur in the Bloc regimes so that they will no longer constitute a threat to free nations.

IN THE light of these general considerations, the military problem resolves itself down into one fundamental question: How can military power be used as a rational and effective instrument for supporting national policy objectives?

Only limited war can serve a coherent purpose. An all-out war would be a political disaster–a senseless thing without an object.

Because war is a political act, and must serve a political purpose, the controlling principle in war is the principle of the objective. It is not possible to conceive of any rational purpose that would be served by an unrestricted nuclear war. The most basic United States objective therefore, is to avert such a disaster.

At the same time the United States recognizes that its own security is bound up with the security of free peoples everywhere. Even the United States, with all its strengths, could not survive a state of siege in a Communist-dominated world. Accordingly, this nation has rejected isolationism in favor of a forward strategy.

SO THAT there should be no misunderstanding of United States intentions, a series of multilateral and bilateral treaties have been ne-

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"Wars are fought for political reasons, and political considerations are solely responsible for both the opening and the cessation of hostilities. Indeed, even when a war has begun, political considerations may cause the objective for which the war is being fought to be modified or may necessitate the substitution of a new objective in place of that for which the war was begun."

The Elder von Moltke

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gotiated as a sort of a diplomatic warning system. And to make the deterrent effect of this warning system doubly meaningful, the United States has deployed its own forces in support of these treaty arrangements, and has strengthened allied forces through various military assistance programs.

The purpose of these regional security arrangements can be stated very simply. The object is to deter aggression by making it unmistakably clear to any would-be aggressor that aggression will not succeed. The free nations of the world are determined that they will not be picked off one-by-one. Thus, the treaties provide that an attack against one will be considered either an attack against all, or a threat to the security of all. And lest there be any room for ambiguous interpretation in certain areas, these treaty arrangements have been further reinforced by the Taiwan Resolution and the American Doctrine.

These regional security arrangements constitute, in effect, a political deterrent. The Free World has witnessed how, even at a time when the United States had a near atomic monopoly, the Communists did not hesitate to employ their military resources in areas which did not involve a direct challenge to the United States. The Communists miscalculated with respect to our political intentions in the case of Korea. The system of free world alliances is intended to remove this cause for miscalculation.

Now the Free World is faced with a new danger—a new source of possible miscalculation. The Soviets may conclude that they can get away with limited adventures because the West will not risk intervention for fear of precipitating all-out hostilities. Communist propaganda has played heavily on this theme during the past two years, insisting that any local war would inevitably expand. Yet concurrently the Soviets have strengthened their own capabilities for limited war.

The obviously calculated purpose of this propaganda is to blackmail the Free World into inaction. The effects of this propaganda are reinforced to the degree that the Free World is unprepared to meet a limited challenge with other than an all-out response.

The deterrent to the all-out war is not likely to deter limited or disguised aggression because the Soviets are likely to believe that their own nuclear delivery capabilities will deter the West from an all-out response to anything less than a direct challenge. The Soviets may "miscalculate" that they can get away with it.

The danger is that if the only courses of military action open to the West would involve grave risk of expanding hostilities, then the Soviet calculation might prove correct. If the Soviets calculate correctly, the West has been blackmailed into inaction; if the Soviets miscalculate, the West is faced with the all-out war it sought to deter.

The only way out of this dilemma —for the alternatives are unacceptable—is to insure that the Free World can muster the forces necessary to defeat aggression wherever it may occur without resort to courses of action which would be likely to bring about all-out war. In other words, the West must be able to deal effectively with limited challenges, employing limited means.

The balance of forces required to defeat limited aggression are significantly different in many respects from the forces which are needed to deter or wage all-out war.

TYPES OF WARFARE

MODERN war may be visualized as a continuum, ranging in violence from a low extreme of guerrilla warfare at one end to the opposite extreme of all-out or unrestricted warfare at the other. However, the distinctive thing about this continuum is that, at the extreme of violence, the continuum tends to break off, with all-out war being not merely different in degree but different in kind from other warfare.

The forces required to wage an unlimited war and the priority of tasks will be significantly different from forces and tasks for limited warfare. Thus, the distinction between all-out or total war and warfare which is less than total provides a useful and meaningful

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". . . The principal purpose of our defense efforts is both to deter—to dissuade an opponent from an attack—and also to deal with an attack should it occur. We must, however, establish the relation between a defense system's value as a deterrent and its value in the event the attack takes place. The two are not identical: a cap pistol may be an excellent deterrent, until it is called upon to perform . . .

"The purpose of being able to defeat an attack is to keep the opponent from gaining or retaining a territorial or other objective, and if possible to persuade him of this in advance so he will feel it is not worth the effort. The purpose of punishment is essentially preventive; scaling the intensity of the reprisal to match the offense aids in giving credibility to this purpose. The difficulty is that, if the opponent disregards the warning and attacks, there may be no immediate connection between the imposition of the penalty and the outcome of his attack; the forces involved may not be directly engaged and might indeed be operating at a considerable geographic distance from one another. This lack of direct engagement could have the dangerous consequence of depriving the conflict of any limits—the attacker desperately hastening to gain and secure his objective, the attacked progressively increasing the scale of punishments as the aggression continued.

"Deterrence by punishment has another shortcoming: it presupposes that the punisher enjoys relative immunity, either because of overwhelming superiority in the means of punishment or because of highly favorable passive defense capabilities. If the punisher is liable to counter-punishment, if his threat of retaliation is met by a threat of corresponding counterretaliation, the value of this form of deterrence is put in serious question . . . Indeed, it seems likely that as time passes there will be only one act which can warrant such retaliation—

framework for planning.

Warfare which is less than total is commonly characterized as limited war. While this term is subject to possible misinterpretation, it has become generally accepted as descriptive of any conflict which is not unlimited from the point of view of the United States.

Limited wars have limited objectives. In a contest between unmatched powers, however, a war which may appear as limited for one side may very well be an unlimited conflict for the other. An unlimited war, on the other hand, visualizes the complete overthrow of the enemy. In modern war, this would normally require the destruction of the government of the opposing nation.

PROBABLY the most basic truth about war in modern times is that limited war has been the norm, whereas total war has been the aberration. Considering the disastrous character of World Wars I

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namely, a prior atomic attack involving our survival as a nation . . .

"Putting it differently, we may say that we should not let our necessary and wholly justified concern with deterring a general thermonuclear war . . . cause us to overlook the need to deter (or to handle, if need be) other types of conflict, nonatomic aggression, local war, 'brush fires' . . . The chances of deterring a general thermonuclear war depend very greatly on our having the capability of deterring all wars, or at least keeping them in hand, both for the reason that local wars could . . . become general and get out of control, and because the opponent is less likely to experiment with nonatomic aggression if our power of deterrence is patently capable of defeating such experiments.

"The balance of our weaponry should be such as to limit as little as possible the choice of means available to our politically responsible authorities, above all the President. The choice, which is a political one, whether the enemy's aggression should be met by punitive actions or by counter-measures on the spot or in the area, must be left as open as possible. Within the limits imposed by requirements of efficiency and the fact that we cannot have as much of everything as we should like, we should not let the availability of weapons impose answers that should be made on political as well as on strategic grounds . . . We must not let the attractions of limiting our military manpower lead us to the error of relying upon the concept of punitive atomic retaliation in a period when it is almost certainly going to be of diminishing applicability."

From "Russia and America, Dangers and Prospects," by Henry L. Roberts, Published for the Council on Foreign Relations by Harper and Brothers.

and II, it is essential to ask: Is there some inexorable logic in human events which makes it inevitable that henceforth any major war will be a total war? On the answer to this question may well rest the fate of civilization.

CLAUSEWITZ considered that limited wars are likely under two sets of circumstances. The first case is where the political tensions or aims are small. The second case is where the military means are such that the overthrow of the enemy either cannot be visualized at all or can only be approached indirectly.

In the past, whenever the political objective was not the overthrow of the enemy nation, wars tended to be limited. Also, whenever the military means were insufficient to accomplish the overthrow of the enemy, wars have been limited.

The ultimate *political aim* of the U.S.S.R. is essentially *unlimited.* The Soviets contemplate the progressive and complete subordination of independent nations to a Communist hegemony. The free nations, on their part, are equally determined to secure their liberty. These disparate, essentially unlimited objectives give rise to great political tensions. In this situation, any war may assume totality.

Balancing this tendency is the other case posited by Clausewitz wherein limited war is likely because the military means are such that the overthrow of the enemy cannot be visualized at all. While this dictum was premised on the insufficiency of the means, it is no less valid when the means may be sufficient to overthrow the enemy but would also produce universal disaster. A victory robbed of its meaning is no victory at all.

Thus, the Soviets are forced to seek the accomplishment of their objective by indirect means. They realize that the United States cannot be defeated directly. This objective must be approached indirectly, by sapping the energy of the Free World, and by neutralizing the United States. By this calculation, the prize plum will be ripe for picking once the balance of power has swung in favor of the Soviets so that further resistance would be futile. This is what the Soviets mean when they talk about competitive coexistence. This is their preferred battleground.

By the same logic, the United States appreciates that its own security is dependent upon preventing such a swing in the world balance of power so that the issue in any war would pose the issue of national survival. This Nation also recognizes that it must live with the threat a long time. It is not possible to conceive of destroying the source of the threat militarily without at the same time destroying the values and institutions we are striving to secure.

These, then, are some of the fundamental reasons why limited war is the most likely threat so long as both United States and the U.S.S.R. are powerfully restrained from the deliberate initiation of all-out war.

". . . . Political aims are the end and war is the means, and the means can never be conceived without the end."

Clausewitz, "On War"

While the all-out assault against the United States is certainly the greatest danger, it is the piecemeal loss of the Free World to limited and camouflaged aggression that constitutes the greatest long-term threat to the Nation's security. A most basic national objective, therefore, is to insure that the United States security position shall not be so eroded. The Nation must be prepared to employ its armed forces, as necessary, in support of this objective.

". . . . The Soviet Union may well feel tempted to create and exploit limited war situations to a greater extent than it did in the past unless the non-Communist countries find a means for deterring local wars other than by the United States threatening a course of action which, while inflicting disastrous punishment on the aggressor, accepts roughly the same punishment for the United States itself."

"Is the American Defense Effort Enough?" by Klaus Knorr, Center of International Studies, Princeton University

DOCTRINE FOR LIMITED WAR

AN IMPORTANT element in preparedness for limited war is well-defined doctrine. This doctrinal requirement demands not only thoroughly developed military doctrine, but also the integration of military concepts with doctrine for exploiting other elements of national power such as diplomacy, the domestic economy, psychological operations, and the like. What might be termed a national doctrine for limited war is required.

Any consideration of doctrine for limited war must begin by answering the question whether limited war is possible in the atomic age. From the foregoing discussion, it is evident that this question must be answered in the affirmative. Both recent history and considerations of logic dictate this conclusion. Therefore, the first element of doctrine for limited war is that *limited war is possible.*

Quite apart from logic and historical experience, there are also important psychological factors involved in this element of doctrine. If, for example, the Free World were induced to believe that limited wars are not possible, the Communists would find a ready-made climate for atomic blackmail. Also, if the West becomes convinced that any war will inevitably expand into an all-out war, and the Soviets are similarly persuaded, then there is a danger that the thought will become father to the reality. Then in a war brought on by accident or miscalculation, both sides might feel constrained to expand the conflict rather than be put at an operational disadvantage.

If, on the other hand, the presumption is that limited wars are possible, then there is some hope of keeping a war from expanding once it has broken out. The only sound basis for planning, therefore, is to assume that warfare can be limited. Without this premise there is no basis for further development of doctrine for limited war. Moreover, this premise is crucial to the deterrence of all-out war in a conflict which might have begun accidentally or by miscalculation.

The second element of doctrine for limited war is that it is possible to make a valid distinction between *limited vs. unlimited operations.* The significant difference for the purposes of developing doctrine for

limited war is that unlimited operations will involve attacks against the basic strengths of the contending parties, whereas limited operations are directed against enemy military forces.

In a limited war, the basic strengths of the contending parties must remain essentially immune to attack. There will also be restrictions on operations against enemy military forces whenever such operations are likely to threaten the strategic balance of power. This subject will be explored more fully when examining the various techniques of limitation.

The third and most basic doctrinal element in limited war is the principle of the *objective*. This is the most decisive limitation in limited war. By definition, a limited war is fought for a limited objective. Any idea of a limited war producing unconditional surrender is a contradiction in terms.

The elements of doctrine considered thus far constitute the essential framework for examining what Dr. Max Millikan of Massachusetts Institute of Technology has called the *techniques of limitation* in warfare. This is the fourth element of limited war doctrine. And it is in this area that the critical doctrinal problems emerge.

THE basic problem, however, can be stated quite simply, and it is this: All operations in a limited war must be clearly in consonance with a limited objective. Any tech-

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"Among the possible challenges we may confront, three stand out most starkly: all-out war, limited war and a kind of war new to the twentieth century and highly developed by the Communists—the disguised or obscure war concealed as internal subversion or takeover by coup d'etat or civil war.

"Of the threats to our security, all-out war is the most overwhelming. It can be defined as an attack of such magnitude that our survival would be directly and immediately at stake. It is therefore the ultimate war, in which no inhibitions would apply as regards the use of weapons.

"For this reason the purpose of our capability for all-out war is above all to prevent war from breaking out; it is effective to the extent that it deters a sudden onslaught on us. At the same time, our capability for all-out war is the essential prerequisite for more discriminating applications of our power . . . Limited war, for instance, can be kept limited only if an opponent must consider expansion of the war too risky. Preparedness for all-out war must therefore be the first charge on our military establishment . . .

"Unfortunately, the capability to deter all-out war does not exhaust our strategic problem . . . Even if we succeed in deterring all-out war by the threat of total annihilation, our country and the rest of the free world remains in peril. For we cannot expect to counter limited

niques for limiting hostilities must satisfy this prerequisite. An important aspect of this requirement is that there must be no cause for the enemy to misinterpret intentions. This problem is posed by Dr. Millikan in these terms: "Our signals must be persuasive."

The basic principle of war involved in devising techniques of limitation is *economy of force.* The force employed should be sufficient to gain the objective—and no more—and should be applied with discrimination to insure that there is no cause for misunderstanding as to the objective.

While it is a relatively simple matter to recognize that there will be operational limitations in a limited war, it is much more difficult to validate the techniques of limitation. Indeed, the difficulties involved are so formidable that many analysts have been led to conclude that it is not possible to define limitations which will stand up in the crucible of war. One must concede that this conclusion may be correct.

But here again we are faced, in part, with a psychological problem. If it is conceded that no limitations on military operations can be sustained, then it would logically follow that there is no utility in attempting to devise "ground rules." Yet without tacit acceptance of such limitations, all hope of limiting warfare is forfeited. On the other hand, if one proceeds on the assumption that the mutual accept-

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military challenges by the response appropriate to all-out surprise attack . . . If all-out war becomes our only counter to aggression, the Soviet Union may be enabled to use its strategic striking force as a shield behind which to achieve limited advances, confronting us in each case with the alternative of yielding to what will seem a marginal Soviet gain or of precipitating a world-wide holocaust.

"As a result, though all-out war is our greatest danger, it does not represent the most likely threat . . . A major difficulty is our lack of mobile forces capable of intervening rapidly and of restoring a local situation before matters get out of hand . . . It is therefore imperative that in addition to our retaliatory force, we develop units which can intervene rapidly and which are able to make their power felt with discrimination and versatility. For this task we require modern sea-lift and an airlift capacity . . .

"The effectiveness of our power . . . depends on our unmistakable ability and willingness to oppose force with force at whatever level of intensity may be required."

"International Security—The Military Aspect," pp. 20-23, Special Studies Report II of Rockefeller Brothers Fund, Doubleday and Company, Inc., 1958. Copyright 1958 by Rockefeller Bros., Inc.

ance of restrictions is possible, it is imperative that the Free World develop tactical concepts for such limited operations.

The absolute precondition for validating any techniques of limitation is that both sides must remain convinced that it is in their own interests to avoid an expansion of hostilities. In other words the deterrent to all-out war is important not only to deter the deliberate launching of unlimited hostilities, but also as a deterrent to an expansion of hostilities in limited war.

The essential precondition, therefore, in sustaining limited operations is the *maintenance of the strategic deterrent.* This is the fifth element of doctrine for limited war.

Barring the act of a madman, it must be assumed that the Soviets will be deterred from the deliberate initiation of all-out war so long as they remain convinced that under any and all circumstances, the consequences of such an act would be unacceptable. The maintenance of this conviction is a first charge upon the military establishment.

The determination of what would be "unacceptable" to the Soviets in a total war involves a calculation of many variables, some of which probably cannot be discerned at all or evaluated with any accuracy by the Western mind. It is important, however, that such a calculation be made, utilizing the best intelligence available, and then adding a margin for error to insure that the U.S.S.R. realizes, beyond peradventure, that all-out war would work its own destruction.

This is not the occasion to attempt such a calculation in quantitative terms. However, these are some of the factors which must be considered:

(1) The offensive capability of the Free World to retaliate, under all conditions. This capability is dependent, in part, on the ability of the Free World to defend its offensive weapons systems by both active and passive means.

(2) The net damage to the United States and the U.S.S.R. to be expected in a nuclear exchange. The threshold of acceptability for the Soviets may depend in considerable degree on their estimate of comparative damage. A major factor in this assessment is the comparative ability of the United States and the U.S.S.R. to defend themselves from nuclear attack.

(3) Finally, and related to (2), the estimated residual capabilities of both sides. Here again, the Soviets might be prepared to accept heavier casualties and damage than otherwise if it were calculated that the balance of residual capabilities was favorable to the attainment of Communist objectives.

It is because of this residual capabilities factor that the effectiveness of a deterrent to all-out war cannot be judged solely in terms of the net capabilities of the United States and the U.S.S.R. in a strategic nuclear exchange. While the first phase of such a conflict would undoubtedly consist principally of what might be termed survival operations, the issue might still have to be decided by subsequent operations in which the climactic act would be performed by the man on

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"If the trumpet give an uncertain sound, who shall prepare himself to the battle."

I Corinthians 14:8

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the ground, physically capable of imposing his will to the degree necessary to secure the objective.

TECHNIQUES OF LIMITATION

ASSUMING the maintenance of the strategic deterrent as the absolute precondition for limited war, what are some of the techniques of limitation? Broadly speaking, the limitations will involve such matters as the area of the conflict, the targets to be attacked, and the weapons to be employed.

It is not possible, with respect to any one of these limitations, to devise one set of criteria for limiting military operations that is necessarily any more valid than any other set. But as indicated earlier, it is important that there be some "ground rules," and that these rules should be such that the enemy is persuaded that operations are in keeping with a limited objective.

The matter of area limitation is self-explanatory. This is probably the limitation which is most easily sustained. In the Korean War, for example, the United Nations forces limited operations to the Korean Peninsula. Accordingly there was no difficulty in maintaining a correlation between military operations and the limited objective sought.

The Communist limitation was of a somewhat different character. In addition to limiting operations to the Korean Peninsula, the Communists also refrained from all but relatively minor air attacks on United Nations forces, and from efforts to sever sea or air lines of communications.

United Nations forces, on the other hand, conducted virtually unrestricted air operations within the confines of the Korean Peninsula. The West, of course, did not utilize atomic weapons. However, there is no reason to conclude that the use of atomic firepower in the Korean War would in itself have necessarily led to an expansion of hostilities.

> **"The purpose of a policy of limited nuclear war is not to provide a substitute for all-out war, but to create a range of options within which the response can be brought into balance with the provocation and where military capability and the will to use it will be in greater harmony than in the stark case when all-out war remains our only response to a challenge."**
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> ***"Nuclear Weapons and Foreign Policy" by Henry A. Kissinger, page 200. Published for the Council on Foreign Relations by Harper and Brothers, 1957.***

The significant thing about the Korean War experience is that both sides used quite different criteria for limiting operations. Nonetheless, the limitations were sustained because both sides judged it in their interests not to expand hostilities to a higher level of violence by committing additional resources. Both sides were, in effect, prepared to accept an outcome which fell short of the desired objective rather than risk expansion of the war.

The willingness to settle for a limited defeat or the frustration of an objective is inherent in any doctrine for limited war. It is equally important that diplomatic channels be kept open and that the opportunity for graceful retreat not be foreclosed.

While an area limitation, as in Korea, is probably the most easily validated, it is at the same time the one which is hardest to define in

advance. There is no yardstick by which to calculate a normal zone for military operations. In one area of the world, military operations might extend over a vast expanse. In another area, operations in a limited war might have to be very carefully circumscribed geographically. It becomes necessary to fall back on the general rule that operations should not extend beyond that area which very clearly has a direct impact on the ability to conduct operations, as necessary, to attain the objective.

WITH respect to target limitations, it is only possible to generalize as to what those limitations might be. In certain situations, there might be no limitations on the targets that could be attacked within the limited area of the conflict. More typically, however, it could be expected that some target limitations would apply.

As already indicated, as a minimum it would be necessary to forego attacks on the basic strengths of the contending parties. Attacks on certain types of targets would undoubtedly be interpreted by the opposing forces as threatening the strategic balance. For example, attacks on targets which resulted in the attrition of elements of the strategic deterrent might force an opponent to resort to all-out attack in desperation, rather than permit such a deterioration in the strategic balance. By the same token, both sides must avoid operations which would dissipate their own strategic deterrent in limited operations.

Approaching the problem more positively, there is no reason why attacks cannot be made within the prescribed area of operations on all those targets which have a direct effect on the operations of the tactical forces. This would include attacks on the opposing ground forces, field depots, supply installations, and other support facilities, the interdiction of lines of communications which directly support tactical operations, neutralization of enemy air and missile forces engaged in direct support of tactical operations, and the like. Again, the primary requirement is that the targets under attack bear an evident relationship to the declared objective of the operations.

THE final technique of limitation is that of weapons limitation. It is in this area that the most difficult doctrinal problem arises—namely, the use of atomic weapons. The basic question is usually put in these terms: How is it possible to limit the use of atomic weapons?

Does not the employment of atomic weapons mark the dividing line between limited and all-out war?

If one side uses a small atomic weapon, will not the opponent retaliate with a larger one, and so on, until the war has expanded into unlimited war?

Once nuclear weapons are used, is there any logical point at which to stop?

There can be no categorical, all-inclusive answer to this question. The truth probably is that there is no logical place to stop, and yet either or both sides may, in fact, restrict themselves in the use of nuclear weapons. For there is no reason to believe that, so long as both sides desire to limit hostilities, the use of atomic fire will in itself lead to all-out war.

INHERENT in all of these techniques of limitation is the presumption that each side must make a new calculation of its risks whenever it expands the conflict in area, in the targets attacked, or in the weapons employed. These risks must be weighed against the worth of the objective.

The conduct of military operations under these conditions will require cool heads and steady nerves. And the side that possesses military capabilities which are militarily effective in accomplishing the objective and yet do not require the deliberate expansion of hostilities has a tremendous advantage in this war of nerves.

The essence of the strategic problem, therefore, is to be able to conduct military operations effectively despite area, target, and weapons limitations. There is no reason why the West need preclude itself from the use of atomic weapons in limited war, for fear of expanding hostilities. However, it must be recognized that limited war operations will generally involve coming to the aid of an ally. Thus a Western decision to initiate the use of atomic weapons must have the approval of the ally on whose territory the war is being fought. Soviet propaganda is attempting to convince the Free World that any use of atomic weapons means total war. It is therefore important to both ourselves and our allies that the use of atomic weapons in a limited war be carefully circumscribed and related to a limited objective.

If these techniques of limitation are to be sustained, it is of the utmost importance that aggression be resisted promptly and successfully. The greatest danger of all-out war is to be found in the little war getting out of control. The likelihood of this happening is increased as the political issues at stake assume an expanded significance. The tensions involved are likely to be in direct proportion to the value of the prize to be won or lost.

"It is of little consequence that we have the nuclear stockpile capability of destroying Russia several times, if Russia simultaneously has the capability to destroy us just once."

T. F. Walkowicz in "Strategic Concepts for the Nuclear Age," The Annals of the American Academy of Political and Social Science, May 1955

THE sixth element of doctrine for limited war, therefore, is *rapid counteraction.* The ability to intervene quickly and to repel an aggression is of basic importance in limited war and, in turn, to the deterrence of all-out war. Once territory is lost, it is extremely difficult to regain without a major effort. In this situation there may be a tendency to rely on threats of punishment in an effort to force the withdrawal of the aggressor. This may well precipitate a series of ultimatums and counter ultimatums until the positions of both sides have become frozen and can no longer be accommodated short of one side or the other either withdrawing or making good on its threat.

On the other hand, if significant military power can be deployed quickly to the area of the aggression, can stop the enemy advance promptly, and then restore the status quo, the risks of intervention are greatly reduced.

IT IS sometimes argued that the Free World cannot muster sufficient forces at any point on the periphery of the Sino-Soviet Bloc to defend successfully because the Soviets can operate on interior lines. Yet, insofar as peripheral actions are concerned, the advantage of operating on interior lines vanishes when the land area in question is hemispheric in extent. There is no reason why the West cannot outmatch the Soviets in strategic mobility if adequate sea and air lift is available.

It is imperative that this strategic factor be exploited fully. The prospects for limiting hostilities are greatly enhanced by a capability for rapid counteraction.

THE seventh and final element of doctrine for limited war is so evident that it requires no extensive elaboration—*mutual support.* Very obviously all of the armed forces, operating as a tri-dimensional team, are required for the conduct of limited war operations, just as they are needed in event of all-out war.

The Army is, of course, dependent upon the Air Force—and in some cases the Navy also—for tactical air support. Also, the attainment of the necessary strategic mobility to make rapid counteraction possible requires suitable airlift and high-speed sea-lift; the Army is dependent upon the Air Force and Navy respectively for this support. It is only by exploiting the full capabilities of all the services in mutually supporting operations that limited war—or all-out war—can be fought successfully.

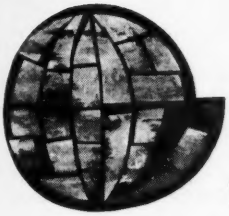
THESE, then, are the principal elements of limited war doctrine:

1. Limited war is possible.
2. There is a valid distinction between unlimited and limited operations.
3. Maintenance of the objective.
4. In limited wars, limitations will be placed upon area of conflict, targets subject to attack, and weapons employed.
5. The absolute precondition for limited war is the maintenance of the strategic deterrent.
6. Rapid and effective counteraction is the single most important operational capability for limited war.
7. Mutual support.

Army programs are designed to support this doctrine, as well as to meet the requirements for deterring all-out war. These are among the Army's first priority objectives.

WITH limited war the most likely threat to the Nation's security, and with the expansion of a limited war the most likely source of an all-out conflict, the capability to wage limited war effectively is the surest guarantee of the Nation's security. The deterrent to the all-out war is not enough, for it cannot assuredly deter limited war, and it is not designed for the conduct of limited operations.

The tactical forces necessary for limited war are no less important to the Nation's security than maintenance of the strategic deterrent. There must be options open to the Free World in resisting Communist aggression—options which lie between inaction on the one hand and actions carrying undue risk of all-out war on the other. In preparing to meet the most overwhelming danger, the lesser danger but more likely threat cannot be neglected. There must be no chink in the armor of deterrence.



To meet contingencies of limited war, Army plans call for a systematic approach in

ORGANIZING AND DEPLOYING OUR FORCES

UNITED STATES Army organization is based on the axiom that the military establishment is an instrument of national policy, designed to assist in the attainment of national objectives. If United States objectives were aggressive in nature, the specific structure of the Army would be relatively simple to achieve. But this nation will never undertake to create a massive military force for purposes of conquest. Instead what it really seeks is a defense establishment adequate to protect the United States.

The Army's Fire Brigade

IMPORTANCE of the Army to United States policy is suggested by the fact that 40 percent of its strength is abroad, in some 75 different countries. These numerous and varied deployments are necessary to make manifest and to sustain the world-wide responsibilities the United States has assumed as leader of the Free World, and the commitments our country has made.

Backing up the overseas deployments is the powerful Strategic Army Force located in the United States, the hard core of which is the Strategic Army Corps, a fire-brigade organized, trained and equipped to confront the Soviet arsonist anywhere, any time, under any conditions; capable of delivering the right degree of force to put out the fire to which it has been called.

But—and this is a point the Army feels constrained to repeat—this essential force has no organic transportation means for rapid, long-distance movement of units with their equipment and supplies. STRAC must hitch-hike with sister services, themselves not yet fully supplied with necessary modern planes and modern ships.

It is generally recognized, however, that security is indivisible, and that our own defense is dependent upon the defense of freedom everywhere. The United States therefore must possess a ground arm which is prepared to fight in two ways—first, to defend our own Nation; and second, to defeat hostile nations who, in the interest of self-aggrandizement, seek to gain control of the land and people of our smaller allies.

The crises which occurred in Greece, Israel, Korea, Algeria, Indochina, Cyprus and Suez are familiar to all who read the news. Within themselves, some of these conflicts appeared to be relatively minor in nature. But the potential of each was such that any one of them might have set off a global holocaust. Recognizing therefore that one of the best guarantees for peace is the prevention of such seemingly local but potentially dangerous conflicts, the United States Army is organized, equipped and deployed to act, with its associated military services and its allies, as a deterrent to the outbreak of such limited wars.

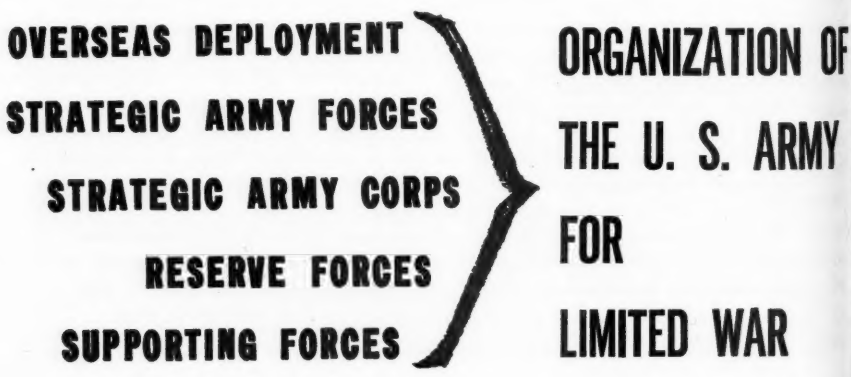
THE organization of an army possessing the flexibility and adaptability to act as a world-wide limited war deterrent requires that its structure be such that it can accomplish three major tasks:

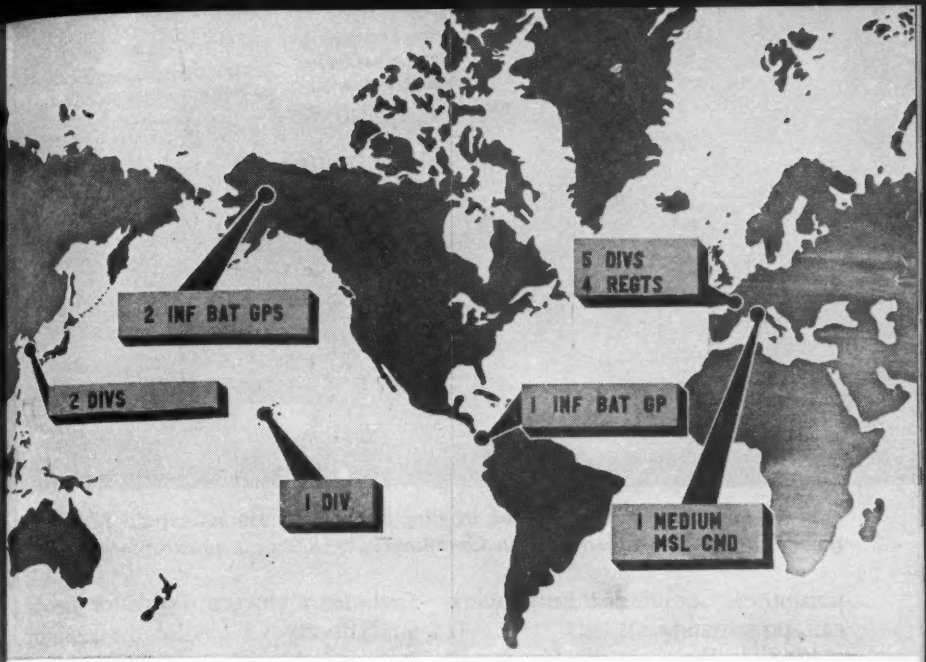
1. The maintenance of overseas deployment of forces for deterrence of aggression and prompt intervention in the event of local hostilities.

2. The maintenance of mobile combat-ready strategic forces in continental United States for the rapid reinforcement of forward deployed forces.

3. The maintenance of Army Reserve and Army National Guard forces in a state of training permitting rapid integration into the active Army if required.

TODAY the active Army is organized around 15 pentomic divisions, each designed to survive and win on the atomic battlefield while maintaining the ability to conduct conventional warfare. All are capable of sustaining themselves in global conflict or local contingencies. These divisions are augmented and supported by equally modern and mobile Army units having the same flexible characteristics. Army National Guard and Reserve units provide further depth to this organization.





Overseas Deployments of Major Army Forces

All of these comprise the five major categories of forces into which the U. S. Army is organized to deter or, if need be, to fight limited war. These categories are:

- Overseas deployments
- Strategic Army Force
- Strategic Army Corps
- Reserve Forces
- Supporting Forces.

OVERSEAS DEPLOYMENTS

ARMY forces, located along the Iron and Bamboo curtains, constitute the United States forward defense line. In conjunction with the other services and our allies, they have the primary mission of deterring aggression. These units act as a constant reminder to any would-be aggressor that a hostile military act will provoke a prompt and decisive reaction by American military strength.

Should this deterrence fail, these forces will defend essential areas to allow time for reinforcement both by our own country and by our allies in the area. To do this, they must be strong enough to prove to our allies that our will and ability to contribute to their defense is substantial and effective. They must convince any hostile nation that movement into the area will be far more expensive than it can afford. They must be prepared to fight against heavy odds.

These forces also provide certain benefits to the local country and, indirectly, to the furthering of the deterrence concept. They enhance the morale of the people whose country they are protecting. They contribute to stability in the area where they are stationed. Through association between troops, their dependents and the local populace, a better picture is conveyed of the American personality, character and democratic ideals—and this serves as a strong antidote to the

Improved mobility is the goal of training exercises. Here Seventh Army engineers bridge a swollen river in Germany . . .

poison of Communist anti-American propaganda.

Finally, these Army forces are a constant reminder of United States willingness to share the hazards of day-to-day living in the shadow of Communist guns. They stand as a positive symbol of our determination to protect those countries whose national ideology includes a sincere desire for peace and liberty.

TODAY approximately 40 percent of the U. S. Army is engaged in this work, in some 75 different countries.

Largest Army organization overseas is the U. S. Seventh Army in Germany, composed of five divi-

Southern European Task Force in northern Italy provides an atomic-capable organization as a key element in military strength of NATO.

. . . while in Korea, troops of Eighth Army move to helicopters during a maneuver emphasizing mobility training.

sions, four separate regiments and numerous artillery and air defense units. The major components of the Seventh Army are the 3d and 4th Armored Divisions, the 8th and 3d Infantry Divisions and the 11th Airborne Division, each one containing missile units capable of delivering atomic weapons.

In Italy, protecting the south flank of central Europe in cooperation with the Italian Army, is the U. S. Army Southern European Task Force (SETAF) which has within it the 1st U. S. Army Missile Command (Medium) equipped with two Honest John and two Corporal battalions. This atomic organization, the first of its kind, is a key segment in NATO strength.

Largest Army organization overseas is the U. S. Seventh Army in Germany, which maintains a constant state of readiness through realistic maneuvers.

"Keeping a close scrutiny over North Koreans and Chinese Communist forces is the U. S. Eighth Army . . . deployed with forces of the Republic of Korea."

On the other side of the world in South Korea, keeping a close scrutiny over the North Koreans and Chinese Communist forces, is the U. S. Eighth Army composed of the 1st Cavalry Division (Infantry) and the 7th Infantry Division with their supporting units. These forces, recently strengthened with modern weapons of the latest type, are deployed with forces of the Republic of Korea along critical terrain to prevent any renewal of aggression from the north against the Republic of Korea. While the United States divisions have been reduced in number from an original wartime strength of eight to the present two, there has been a compensatory increase in strength and efficiency in the Republic of Korea Army. Additionally, Japan has made progress in generating her own indigenous strength.

Elsewhere, the Army has the 25th Infantry Division in Hawaii, and two battle groups in Alaska and one in the Caribbean.

ONE of the main contributions of the Army to deterring limited war is the support which it gives to the military forces of friendly foreign nations. This combined allied military strength represents the equivalent of over 200 divisions—a sizable part of the Free World's military strength.

By a variety of means, the Army seeks to improve the effectiveness of this strength to the maximum extent possible. Highly qualified military and civilian personnel are assigned to Military Assistance Advisory Groups (MAAG) which are furnished to friendly foreign countries. Their job is to assist in train-

"I notice that always there are three courses open to the enemy, and that he usually takes the fourth."

Von Moltke

ing these foreign forces in the use and maintenance of our military equipment. Currently, there are MAAGs and Military Missions in 44 different nations of Europe, Asia and South America.

The work of MAAG and Mission personnel contributes significantly to the deterrence of limited war in areas where otherwise military weakness might encourage aggression. In developing the strength of our allies, the U. S. Army inspires and assists other nations to protect themselves against the inroads of Communism. In so doing, it makes a significant contribution to Free World security.

STRATEGIC ARMY FORCE

ARMY FORCES overseas are backed up by the Strategic Army Force (STRAF) located in the United States. STRAF currently consists of seven Army divisions and substantial supporting units. It provides two essential elements of strength.

First, there is a versatile force, maintained in a high state of readiness, prepared to move on short notice anywhere in the world either to reinforce our deployed forces or to support our allies. This hard core of STRAF is the Strategic Army Corps (STRAC).

Second, since it is necessary to maintain STRAC and the forces deployed overseas in a high state of combat effectiveness, there is a requirement for an active training base with STRAF. This force consists of three divisions and is known as the STRAC reinforcement. This

MAAG advisers, like these checking a paratrooper of Japan Self Defense Force, make a significant contribution to Free World security.

STRATEGIC ARMY FORCE

training base also is essential for the expansion of the active forces upon mobilization.

STRATEGIC ARMY CORPS

THE Strategic Army Corps (STRAC), a four division combat ready force, is the "fire brigade" of the Army.

This force is poised and ready to fight, day and night, around the clock. Its initial elements are constantly on the alert, ready to move in a matter of hours with their guns, vehicles and missiles to a departure airfield or port of embarkation.

STRAC is a strong versatile force designed, organized, trained and equipped to meet any enemy, at any time, at any place. It is a balanced force with supporting units which give it staying power; it has the ability to sustain itself in extended ground combat; it is ready to employ an arsenal of weapons ranging from the bayonet to

the atomic warhead; and it can therefore apply that measured, sustained degree of force appropriate to the threat which can best avoid the risk of an all-out nuclear war.

STRAC is all these things but, above all, it is a ready force. In these times, readiness to combat aggression is particularly vital to national security, for speed of reaction is a key factor in coping with the brushfire war.

STRAC has one prime prerequisite which it cannot provide for itself. It needs transportation for strategic mobility. Under the present organization of our Armed Forces, the Army does not have organic transportation means for rapid, long-range movement of Army forces. The Army must therefore "hitch-hike" with the other military services; in other words, the Army's fire brigade is dependent upon its sister services to get to the fire.

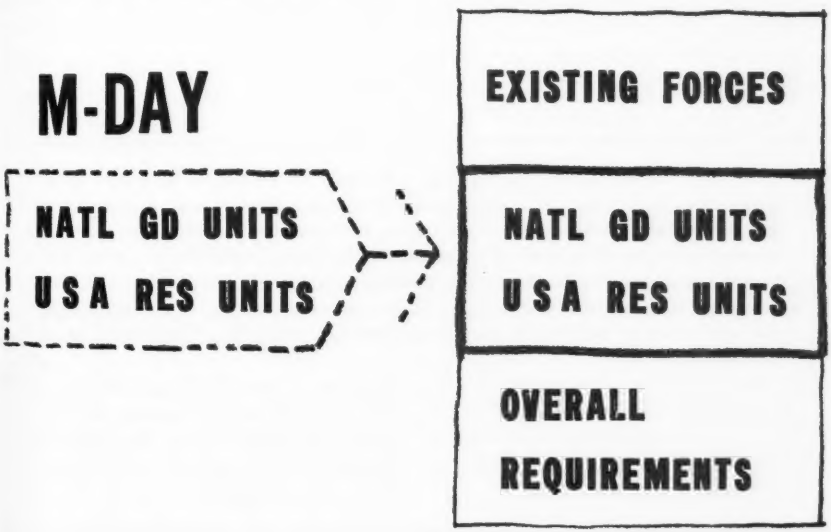
In brief, STRAC is a tangible and positive factor which any enemy must consider seriously in the formulation of his war plans. With its mobility and tremendous striking power, it is an important element of strength in carrying out the Army's limited war deterrent role.

"It would seem the height of folly for the Soviet Union to attack the United States directly and thereby unleash the Strategic Air Command. The Soviets can achieve their ultimate goal, the neutralization of the United States, at much less risk by gradually eroding the peripheral areas, which will imperceptibly shift the balance of power against us without ever presenting us with a clear-cut challenge."

"Military Policy and Defense of the 'Gray Areas'," Henry A. Kissinger in Foreign Affairs Magazine, April 1955

RESERVE FORCES

RESERVE forces are those Army National Guard and Army Reserve divisions and support units which will be mobilized and deployed as soon after M-Day as the situation will permit. The number of these



forces to be mobilized and deployed will depend upon the requirements existing at the time. At present, more than 1,400,000 men in the Army's Ready Reserve—nearly 700,000 of them in pay drill status—are available for call to duty. Meanwhile, these reserve forces maintain an increasingly higher level of training.

These forces will step into the crucial gap which could exist between the active Army in being at the outbreak of hositilities and the overall mobilization requirements for continued conduct of a limited war, as well as maintenance of a stature to cope with general war. Further, these forces will provide a mobilization springboard required for the conduct of operations necessary to bring any war to a successful conclusion.

SUPPORTING FORCES

ABOUT 70 percent of the total Army is devoted directly to combat and combat support forces for deterrence or for fighting if the need arises. The remaining percentage is devoted to the maintenance of a support base world-wide involving such diversified activities as logistics, research and development, command and administration, the training base, joint projects, cross and common service support (such as Single Manager projects), transportation, signal, engineer services.

NEVER before in its history has the United States assumed such world-wide responsibilities. To carry out these commitments the Nation requires a fully mobile, modern, and flexible ground army poised as a deterrent force and capable of fighting anywhere in the world on short notice under all conditions of warfare.

This task has been undertaken in the face of a ruthless and insidious adversary—an arsonist who may foment his mischief in any corner of the globe. The degree of force selected to put out the particular fire must be just right. A tack hammer used to drive a spike breaks the tack hammer just as a sledge used to drive a tack into a board smashes the board. For that reason, the U. S. Army is organized to meet the contingencies of limited war with the capability of applying measured force as the situation may dictate.

". . . . Preparation for limited war is as vital to American security as preparation for total war. It is a matter for thorough and systematic planning, not for improvisation. After all, in developing our capacity for total war we are preparing for the least likely contingency; its principal justification lies in the fact that it may never be used. But in developing a capacity for limited war, we would be preparing to meet the most likely contingency; we would be maintaining the only credible deterrent to Communist advances in the most vulnerable areas of the world."

"Limited War, the Challenge to American Strategy," by Robert Endicott Osgood, page 237. Published by University of Chicago Press. Copyright 1957 by the University of Chicago.

Reaching the trouble spot

ARMY REQUIREMENTS FOR STRATEGIC MOBILITY

WHAT is strategic mobility? As used here the phrase encompasses the ability to move military forces rapidly over great distances, together with their equipment, supplies, and service support.

Speed of movement of military forces is a principal factor in strategic mobility. And because military forces require vast tonnages of equipment and supplies for sustained operations, the timely and efficient movement of these tonnages is another essential factor in strategic mobility.

It would appear that these two factors, speed and vast tonnages, are diametrically opposed; that no

Where We Fall Short

THE Army is convinced that strong combat forces should at all times be ready to cope with even limited aggression. The risk in not winning promptly is too great to take, for it could result in expanding operations, possibly in all-out nuclear war.

In many countries facing the Iron and Bamboo Curtains, the Army has combat forces always ready to fight alongside their local allies; but if attacked, these forces would have to be augmented in a hurry.

Or aggression may come in areas where there are no United States combat troops. If so, how long should it take us to get fighting men to the scene?

A ready-to-go division in the United States can have combat soldiers at a departure airfield in a few hours. The United States should be able to airlift a decisive limited war force to any place in the world in a matter of four or five days.

This kind of essential mobility requires adequate airlift to start with, and modern sea-lift to sustain. But there is an alarming lack of modernization in our troop-and-supply-carrying airfleet. Development of modernized planes and ships is outside the Army's sphere of activity, but in view of the importance of mobility, the Army thinks it necessary to have sufficient facilities for moving troops and supplies swiftly wherever aggression appears.

one means of transportation can accomplish both. To a degree, this is indeed the case. At the present time and in the foreseeable future, the airplane is our most rapid means of transportation, while the ship can carry the largest load.

The Army requires a combination of airlift and sea-lift to attain strategic mobility. Note that the words "sea-lift" and "airlift" have been used instead of "ships" or "long-range-aircraft." The question is not merely the number of vehicles, but rather cargo capacity and how many trips can be made.

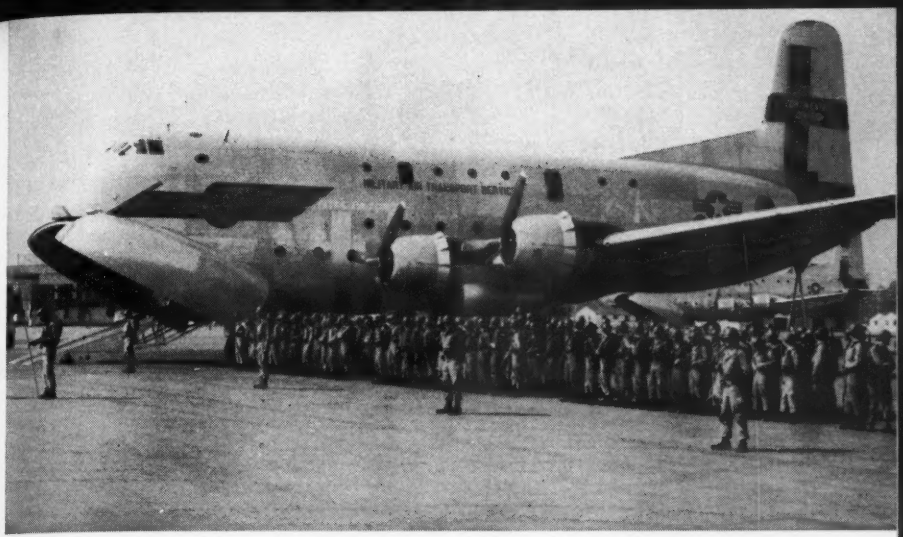
Aircraft with increased range and payload are required to lessen our dependence upon en route bases.

BASED upon study of many possible situations, the Army is convinced that strong ground forces will be needed to cope with limited aggression. The division is the basic Army unit for sustained combat. Composed as it is of combat, combat support command, administrative and logistical elements, the division is the smallest unit which has the necessary self-sufficiency and staying power. If hostilities in Korea were resumed, for example, the Army would certainly need to augment its forces there with additional divisions. Had the United States been asked by the United Nations to intervene in Indo-China, Israel or Suez, certainly substantial ground forces would have been needed.

The armies of our allies may be expected to fight gallantly to halt the spread of Communist aggression. If we are asked to assist in stamping out this aggression which threatens to engulf our allies' homelands, we owe it to these allies to strengthen their lines with our divisions and to support their divisions with our missiles and logistics. In short, if limited war is forced upon us in spite of all that can be done to prevent it short of appeasement, we must respond with major combat forces—and we must respond in hours and days, rather than months.

MOBILITY FOR COMBAT

THE Army is making great strides in streamlining its combat forces. Unit weights have been re-



Mobility and striking power of the Strategic Army Corps is an important element of strength in carrying out the Army's limited war deterrent role.

duced while striking power has been increased. For example, the pentomic airborne division weighs less than one-half as much as its World War II counterpart. The fighting elements of the division, with supplies and equipment, now weigh approximately 7,000 tons, with no lessening of firepower. The infantry division, too, has been streamlined and has the capability of organizing an air-transportable combat echelon which is very similar in size, weight and firepower to an airborne division. (See "New Divisional Organization," May 1957 DIGEST.)

In active combat operations, divi-

Supplies and logistical elements must accompany combat units engaged in limited war operations in remote areas.

"Combat elements of Army forces must be moved by air, together with logistical support if such support is not available in the objective area."

sions consume vast quantities of supplies. Experience has shown that in combat of average intensity, a unit may expend more than its own weight in supplies in 30 days of fighting.

In the event Army forces should be moved to areas such as Korea or Europe where logistical bases and supplies are available, there would be no need to move additional supplies during the first few weeks of the operation. On the other hand, if Army forces are called upon to participate in limited war in most other areas of the world, the supplies and logistic elements must accompany the combat units. Thus it can be seen that the lift requirements for a force vary widely, depending upon such factors as the number of divisions needed and the availability of logistical bases in the objective area. (See "Strategic Mobility," January 1957 DIGEST.)

BY AIR AND SEA

IT has been pointed out that speed of reaction is essential in coping with limited war and that the airplane is, at the present time, the fastest means of transportation available. Accordingly, combat elements of Army forces must be moved by air, together with logistical support if such support is not available in the objective area.

On the other hand sea-lift is more economical and is capable of moving vastly greater tonnages than airlift. Sea-lift will be utilized, therefore, to transport those Army elements—tanks, heavy artillery, and the like—which are not practical for air movements. In this way, sea-lift will initially supplement and reduce requirements for airlift. In later phases of an operation, sea-lift

will provide the primary means for supporting the force logistically in sustained ground combat.

STRATEGIC AIR MOVEMENT

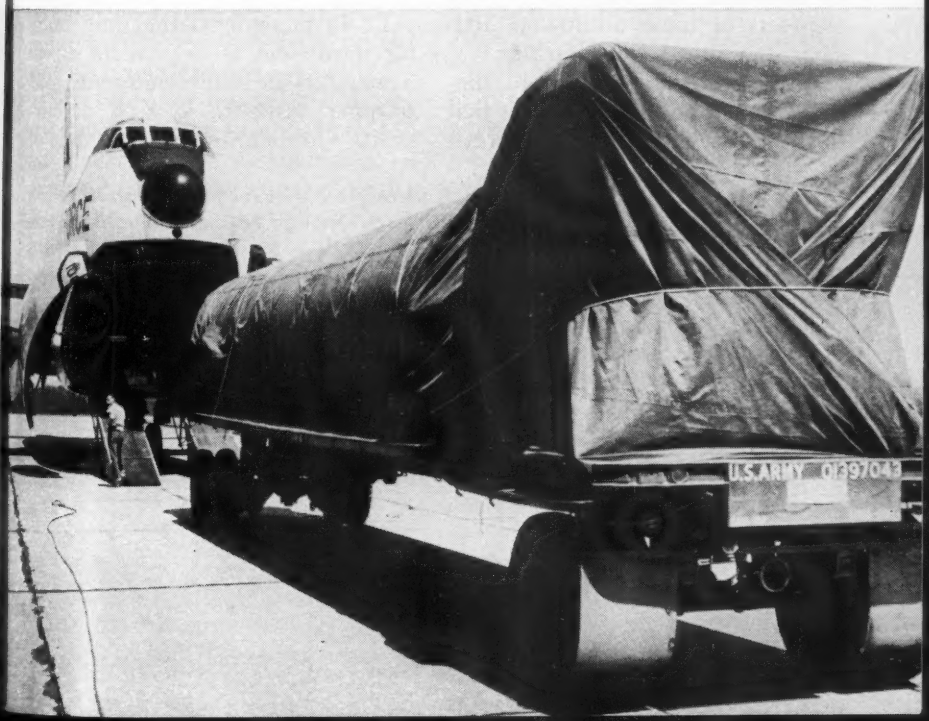
THE airborne division is designed for tactical airborne assault operations, but it is also ideally suited for strategic or long-distance air movement. An airborne division, therefore, might well be the initial combat element committed in a limited war.

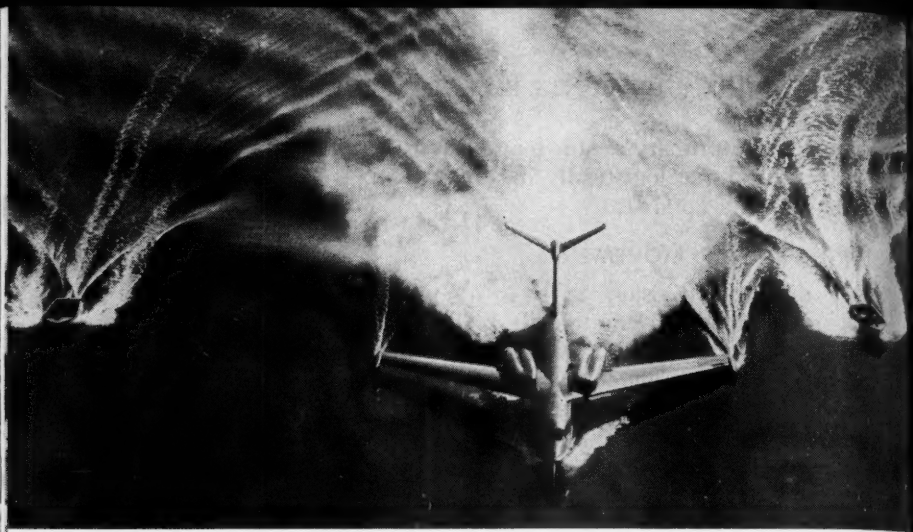
In contrast to a parachute assault operation in which hundreds of aircraft would be in the air at one time, a strategic air movement would resemble shuttle-bus movements in which each airplane would make several round trips. As in the Berlin airlift, airplanes would land at a suitable airfield in the proximity of the objective area at regular intervals, at the highest possible rate.

The flying time from Fort Campbell, Kentucky, the home of one of the Army's airborne divisions, varies from 13 hours to Alaska to 45 hours to Indo-China. A ready-to-go division can have combat-ready soldiers at a departure airfield in a few hours' time.

Allowing for ground and air movement, a reasonable objective would be to have the first Army green uniforms appear in an objective area within two or three days and for the first unit, a battle group, to be in the area on the third or fourth day. Shuttle movement should continue at the highest rate that available air bases will support in order to insure the arrival of the first division in the shortest possible time.

Typical of airlift of weapons is delivery of Jupiter-C, being loaded at Army Ballistic Missile Agency for shipment to Cape Canaveral.





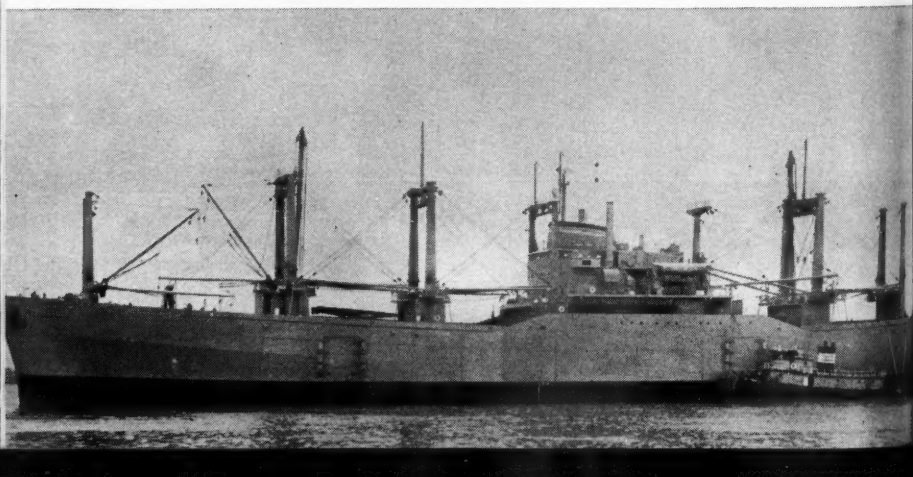
"Important . . . would be development of very large water-based aircraft, for lakes and streams are much more plentiful than airfields [and are] not vulnerable to enemy attack."

The airlifted force must have supplies and logistical support and, if these are not available in the objective area, they too must be airlifted until such time as a surface line of communication can be established. Additional divisions may, and usually will, be required as promptly as possible. Initial elements of these additional divisions may also require airlift.

Army airlift requirements for limited war can be summarized as that lift necessary to have initial combat troops in the area in a matter of hours or days, to transport a strong combat force which may have to be as large as one half of the Strategic Army Corps (STRAC) to an objective area within a few weeks and to support that force until surface ships can take over this task.

IT IS recognized that any mass air movement is dependent upon availability of suitable en route and terminal airfields, as well as aircraft. Considering current types of

"In wartime sea-lift is indispensable. It therefore behooves the Nation to retain in being a fleet of ocean-going vessels large enough to meet initial wartime needs."



cargo aircraft, en route bases are a more critical limiting factor than generally realized.

In order to carry an economical payload, current types of aircraft must be refueled several times during an intercontinental flight. While in-flight refueling could theoretically be utilized, airfields spaced along the route are usually relied upon. In the latter case, the longest space along the route is the "critical leg" which determines the payload which can be carried over the entire route and which may be the crucial factor in determining whether or not the route can be flown at all. For example, the "critical leg" to the Far East is approximately 2200 miles. Only a few types of cargo aircraft can generate a useful payload at this range.

Notwithstanding the increasing threat of limited war, there is an alarming lack of modernization in our common user air fleet. The workhorse of the fleet, the C-124, is aging and many years have passed since it was designed.

If we are to deter limited war we must either be pre-positioned in all likely areas of aggression—a course both costly and politically inflexible—or we must be able to move a decisive force quickly to any trouble spot. In other words, our reaction time must be as nearly instantaneous as possible.

In terms of airlift this means far more than just speed of travel. Probably the most important single factor is speed of combat force build-up in the objective area. We gain little if we maintain instant readiness at home on the one hand but on the other hand must waste ten days building up a force in the objective. Aircraft that can carry only 150 to 200 men and their equipment and whose characteristics limit landing operations to well-developed airfields obviously prolong reaction time and restrict operations to areas having well-developed airfields. There is military need for a modern, large payload, high-speed aircraft.

"Between the two extremes of cold war and total war there is only one other kind of war: employment of premeditated firepower under conditions which are manageable and which permit negotiation, retreat, termination, or armistice."

Brigadier General Lloyd P. Hopwood, Commandant, Air Command and Staff College, in Air University Quarterly, Summer 1956.

SEA-LIFT

AIRLIFT and sea-lift complement one another. Both are needed for strategic mobility. The Nation's fleet of ocean-going vessels thus has an important role to play, both in peace and in war. In wartime particularly, sea-lift is indispensable. It therefore behooves the Nation to retain in being a fleet of ocean-going vessels large enough to meet initial wartime needs.

For reasons of economy, a part of the military fleet may have to be put in mothballs; even so, it is essential that sufficient sea-lift be retained in the active fleet to support STRAC. The equipment and supplies which remain after the combat elements of the leading divisions of STRAC are airlifted must be moved by sea; so must the vast tonnages of supplies consumed by STRAC in combat.

The problem of sea lines of com-

"Army airlift requirements for limited war can be summarized as that lift necessary to have initial combat troops in the area in . . . hours or days. . . ."

munication is complicated by the need for dispersion in modern warfare. World War II-type supply operations through congested ports can never again be risked. This means that a large proportion of cargo must be landed across beaches or in small ports. Thus the requirement exists for specialized types of ships which will speed critical unloading operations. The amphibious and landing craft which played such an important role in World War II, or the descendants of these craft, will fill a part of the need for specialized craft.

However, with increasing emphasis upon speed of reaction in future warfare, particularly limited warfare, we must have faster ocean-going ships which are capable of discharging cargo more rapidly and efficiently. At the present time, the factor which most limits rapid movement by sea is not steaming time so much as loading and unloading time. Hence the need for specialized ships to give us greater speed and efficiency.

MOBILITY AND THE FUTURE

WHAT of the future? What research and development programs are needed to give the Nation the strategic mobility for ground forces which is so essential to our existence? The answer is modernization —modernization of current families of ships and cargo aircraft.

There should be continued, expedited development of roll-on roll-off types of ships which are now entering the inventory. This type and its sister, the trailer ship, will allow whole convoys of trucks and trailers to be driven on and off under their own power. Ships of this type promise to be great time savers; and more of them could be used. In addition, new and faster

"World War II type supply operations through congested ports can never again be risked. . . . A large proportion of cargo must be landed across beaches."

ships of every type are required in quantity since the fleets which were built for World War II are approaching obsolescence. Converted aircraft carriers could provide one such type.

Also required is an acceleration of research and development programs for long-range cargo aircraft—programs which look far into the future. There appears to be a long and useful future for the manned cargo aircraft, and there appears to be little prospect of the cargo aircraft being replaced by the missile. While speed is important, other characteristics, particularly increased range and payload, will pay bigger dividends.

Aircraft with increased range and payload are a "must" if we are to lessen our dependence upon en route bases—our Achilles heel. The C-132 aircraft, had it been ordered into production, would have been a step forward for it was designed to lift 50 tons about 3500 miles.

There is a need for a cargo aircraft which is less dependent upon the long runways of first-class airfields, which has improved capabilities for landing and taking off from short, unimproved fields. The ideal aircraft for airlift purposes would be one capable of carrying 600 or 700 troops at speeds of 500 to 600 miles per hour—an aircraft capable of carrying heavy combat-type equipment, non-stop, for distances of 3,000 to 4,000 miles and at the same time not requiring elaborate landing facilities.

An important variation of such a program would be the development of very large water-based aircraft, for lakes and streams are much more plentiful than airfields, are not vulnerable to enemy attack, and require less preparation and maintenance.

It is true that problems of loading, unloading and maintenance loom as formidable obstacles; nevertheless, water-based aircraft might very well be the answer to strategic mobility for Army forces. Looking farther into the future, the atomic-powered cargo aircraft, either in a land-based or water-based configuration, seems to promise extended range and increased mobility.

IT IS recognized that these programs for development of ships and airplanes lie outside the Army's sphere of activity; however in view of the importance of strategic mobility, it is deemed essential that the Army's needs be made known and that active steps be taken to insure that suitable lift is provided. The Army, for its part, can and will continue to improve the readiness of STRAC in order to react even more promptly. The evolutionary process of streamlining units while retaining or improving firepower will continue, and every effort will be made to reduce requirements for lift.

New and even revolutionary means of improving strategic mobility will be studied. It may also be possible to reduce initial logistical requirements by pre-stocking supplies and equipment in the vicinity of likely trouble spots.

These, then, are the tasks to be undertaken. These are the means by which the Army can deter limited war. These are the means by which the Nation can win in military conflict short of general war, should it be forced upon us.

Geared for graduated deterrence

ARMY OPERATIONS IN LIMITED WAR

SINCE it is impossible to predict accurately where limited war may occur in the future, the Army must be prepared to conduct operations of varying form on any type of terrain, in any climate, anywhere in the world, and against potential enemy forces of diverse types.

Operations in limited war may range from small-scale actions not involving the use of atomic weapons to situations in which extensive land operations may ensue, even including fairly extensive use of nuclear weapons, but with operations carried out in a manner designed to prevent expansion of the conflict into general war.

This policy of restraint requires that Army forces be capable of vastly improved strategic and tactical mobility. These forces must be able to intervene where required, apply an appropriate degree of measured force, and localize the conflict prior to its spreading.

Numerical inferiority in a nonatomic limited war must be offset by attaining and exploiting any significant U. S. Army superiority in

To Maintain Peace or Win Wars . . .

THE Army must have the ground and air mobility required to enter combat at points of its own choosing. Except for heaviest elements, Army forces must be transportable in aircraft which can operate from unprepared areas.

To get this degree of mobility, major improvements are needed in two fields:

First, the Army needs lightweight, armored, air-transportable vehicles with true cross-country mobility which provides protection and speed of movement; and

Second, the Army needs extension of ground transportation designed to avoid obstacles to more conventional forms of ground movement, which means that it needs low-flying air vehicles capable of takeoff and landing in selected but unprepared places.

conventional firepower, ground and air mobility, control means, and imaginative tactics. The field of mobility, if exploited, offers opportunities for strategic and tactical innovations comparable to those made possible by atomic-bearing missiles.

Limited warfare not involving the use of atomic weapons will nevertheless be conducted under threat of their use. In general the degree of dispersal in such situations perforce will be appreciably greater than in the past. Exploitation of improved conventional firepower, mobility, and communications means will enable commanders to achieve operational capabilities and flexibility unrivalled in past nonatomic wars.

MAJOR FACTORS

TWO major factors play a considerable part in the Army's capabilities to wage limited war—atomic weapons and strategic mobility. The first of these—atomic weapons—has a profound effect on concepts for limited war since both political and military imponderables are an inherent part of their use. The decision to use—or not to use—atomic weapons will be influenced by consideration of such factors as the psychological effect, risks of expanding the conflict, existence of suitable targets in the area of operations, and comparative military advantages to the opposing forces.

An important criterion in limited war is to prevent the expansion of hostilities through the selective application of force with appropriate restraints. This means that, under atomic conditions, weapons of various ranges and yields must be used in order to obtain the required degree of controlled destruction. Accuracy of weapons must be such as to insure that damage is restricted to selected military targets and that significant radioactive fallout is avoided.

While emphasizing the requirements for atomic warfare in planning, research and development, the Army is at the same time retaining and enhancing its capabilities for delivery of nonatomic munitions. These munitions will be used in nonatomic situations, as well as against selected targets in atomic war. Army forces will have the capability of combining atomic

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". . . . The essential point is and will remain that we cannot leave ourselves in a position in Europe where we have no middle course between nuclear warfare and the gradual erosion of the Western bastion. We must have something between the hydrogen bomb and the frontier policeman, to ensure that we are not nibbled to death by subversion, infiltration, the looming threat of the Red Army which subjugated Czechoslovakia without actual intervention, and even the tactics of the *fait accompli*—a modern version of Hitler's occupation of the Rhineland. We must, in short, have a powerful screen on the frontiers of freedom in Europe to ensure that we do not have to use the bomb unless the Russians make it clear that they are prepared to force a total war. And that screen can consist only of NATO troops on the ground, with air cover and support."

"The Great Deterrent and Its Limitations" by Sir John Slessor in Bulletin of the Atomic Scientists, May 1956

and conventional firepower, in suitable proportion, with decisive maneuver in order to achieve full effectiveness.

THE second factor in the Army's capabilities for limited war—strategic mobility—stems from our strategic dispositions. (*See page 23.*) In this connection, it should be reemphasized that implementation of a limited war strategy is absolutely dependent on the ability to respond rapidly to aggression. Every day that is lost, and each piece of ground lost, compounds the risk.

". . . . The United States has not been content to rely upon a peace which could be preserved only by a capacity to destroy vast segments of the human race. Such a concept is acceptable only as a last alternative. . . . In the future it may . . . . be feasible to place less reliance upon deterrence of vast retaliatory power."

John Foster Dulles on "Challenge and Response in United States Policy," Foreign Affairs Magazine, October 1957

BATTLEFIELD POSTURE

UNITS on the limited war battlefield must assume a posture which provides minimum vulnerability to nuclear munitions through increased dispersion, increased protection, and increased mobility.

This posture of minimum vulnerability may be attained by maximum dispersal in all areas which can be reached by enemy weapons; tactical and logistic austerity; rearward location of all elements whose presence is not required in the forward portion of the combat area; improved concealment; deception; cover in the forms of overhead protection and use of lightweight armored vehicles; and improved defensive fires and electronic countermeasures.

The width and depth of the combat areas will necessarily be great because of the increased range and effectiveness of weapons, improved mobility means, and reduced reaction times.

Basic tactical elements will be dispersed in width and depth, both in defensive and offensive operations. They will be self-contained, capable of operating independently.

The tactical offense and tactical defense will be largely indistinguishable. Small units will pass rapidly from one to the other without extensive preparation or reorientation of effort. Ground combat will be marked by action to find the enemy, determine his configuration, and destroy him with atomic fire. Clashes will be generally violent, decisive, and short in duration.

THE primary objective of maneuver will be to find or form suitable targets for atomic weapons, then exploit the effect of destructive fires with highly mobile forces. Ground and air mobility will permit rapid deployment and redisposition of forces, thus facilitating exploitation of atomic fires by imaginative tactics. Using combined firepower and mobility means, Army forces will be capable of rapidly concentrating combat power from dispersed formations.

The employment of atomic weapons will entail a three-fold requirement—

- *decentralized control and employment,* generally to the lowest echelon controlling the delivery means and capable of coordinating the action,

• *accurate, low yield nuclear weapons for close support,* to ensure rapid response, reduction of obstacles, minimum danger to friendly troops, selective destruction of targets, and

• *small, mobile task forces* to exploit atomic fires, using appropriate combinations of ground and air mobility means.

Divisions will operate over significantly greater areas than heretofore with a resultant increased emphasis on highly coordinated but essentially independent action by subordinate combat groupings. The division will perform major independent operations at increasingly greater depths to capitalize on atomic weapons and on increased use of the air medium. Division fronts will be screened by highly mobile ground and air reconnaissance and surveillance elements, to minimize infiltration, acquire targets, force the enemy into creating remunerative targets, and direct the employment of supporting weapons.

Distances between combat elements will be limited only by the means available to effect adequate control of subordinate units and to maintain surveillance over and fire coverage of unoccupied areas. Widths and depths of zones will be considerably greater than those assigned in the past.

FORCES FOR LIMITED WAR

ESSENTIALLY the characteristics of forces needed for limited war are the same as those required for the initial tasks in general war.

Three types of forces are required—first, lightweight or fire-brigade units whose primary missions require their habitual or frequent movement by organic or supporting aircraft; second, heavy forces organized for sustained ground combat whose missions do not require movement by air except as a premium method of transportation; and third, U. S. Army Missile Commands (air transportable, medium or heavy) capable of providing atomic fire support to allied forces, either alone or in conjunction with other United States forces.

Wide variations may occur in the number of forces required in limited war. A small peripheral action may require only small forces, either in the form of divisions or elements thereof or in the form of Army Missile Commands. At the other extreme, under the umbrella of mutual atomic deterrence, a limited war may involve extensive land operations with major forces; moreover, it may require forces in other areas to deter or to deal with other aggressions, as well as strategic reserve and other units to perform initial tasks in preparation for global war, should it come.

In developing forces for limited war, the Army seeks to give all of its types of divisions a common basic structural pattern and generally the same equipment. However, the Army recognizes that a single type division, though a desirable goal, should not be adopted until it is possible to incorporate into such a division the air transportability characteristics of our current airborne divisions and the capabilities for sustained ground

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"The most complete and happy victory is this: to compel one's enemy to give up his purpose, while suffering no harm oneself."

Belisarius

combat now encompassed by our infantry and armored divisions.

THE current Pentomic organizations are a major step toward the types of forces needed. Their design is based on four fundamental principles—

(1) Atomic/nonatomic adaptability

(2) Organic compactness and relative lightness and mobility, with materiel limited to that habitually needed in any likely theater of operations

(3) Command simplification and cohesion achieved by new signal equipment and mobility means which extend the commander's span of control to a larger number of units—five—than was formerly possible, and

(4) Susceptibility of organizational structure to the progressive introduction of new weapons.

THE new airborne division is a typical example of the Pentomic organizational concept. Its strength of less than 12,000—representing a significant reduction from its former strength of 17,000—was made possible by creating a new divisional structure and by eliminating or modifying units which were not air-transportable.

The division's pentagonal structure provides five subordinate units at each echelon of command, including five battle groups as the basic tactical elements. Organic atomic capability is provided by the inclusion of the Honest John rocket as an interim delivery system.

The reconnaissance troop contains a new division target acquisition unit employing aerial observation, photography, and devices such as TV, infrared and radar.

". . . . War cannot be limited unless both sides wish to keep it limited."

"Nuclear Weapons and Foreign Policy," by Henry A. Kissinger, page 144. Published for the Council on Foreign Relations by Harper and Brothers, 1957.

While specifically organized and equipped for an airborne role, the Pentomic airborne division is, nonetheless, completely adaptable to air movement by either strategic or tactical transport.

OFFENSIVE OPERATIONS

OFFENSIVE operations will exploit the effects of mass destruction weapons by rapid concentration, violent action, consolidation, and dispersal. Prolonged concentrations will not be feasible. To reduce vulnerabilities, concentration will be in terms of time rather than space. Massing of combat power at the decisive time and place will be accomplished quickly and maintained as briefly as possible.

Guided missile, rocket and artillery firepower delivered from divergent and far distant points will be concentrated to achieve an overwhelming fire superiority in the objective area. Mobile forces using ground and air vehicles will converge from columnar and dispersed formations on the focal point of the attack, overrunning and destroying enemy forces and weapons delivery systems, encircling enemy formations, and exploiting the situation as feasible. Nuclear weapons will be used to destroy counterattacking enemy forces and to disrupt reorganization of their defenses.

Attacking forces will be eche-

"The ultimate object of war is a stable peace."

Aristotle (According to Alexander the Great)

loned deeply and will operate on wide frontages. Deep penetration, early linkup, and raid-type operations will be conducted using organic and supporting aircraft. The depth of these operations will depend on the ability of joint forces to overcome enemy fires which interfere with the maintenance of essential land and air corridors.

Atomic firepower and air mobility will permit wide flexibility in selection of the maneuver plan. Air mobility will permit vertical envelopment. Atomic firepower will minimize the disadvantage of the penetration. The commander thus will be able to select more freely that form of maneuver which offers the greatest chance of major success and exploitation. Night operations will be commonplace; daylight movement will be influenced greatly by enemy atomic capabilities, including scale of use, or degree of threat, and degree to which these capabilities have been neutralized.

DEFENSIVE OPERATIONS

LEADING elements of defending forces will be deployed laterally in order to form a mobile screen providing surveillance of the entire front and some measure of protection against infiltration. Behind this screen, mobile defensive forces will be arranged in staggered formations in great depth. These combat groupings, of battle group or reinforced company size, will prepare and occupy positions while engaging in frequent movements—sideslipping, rolling with the punch, or mounting local spoiling attacks. Such groupings will have sustained fire weapons of the conventional type, as well as a capability for delivering accurate low-yield atomic weapons.

Screening and reconnaissance forces will be used to ascertain the direction of enemy movements. Besides denying the enemy access to friendly areas, they will direct the employment of supporting weapons. Patrols, airborne observers, and electronic surveillance equipment will be used to locate and counter small unit infiltration and reconnaissance. Massed attacks, blunted and canalized by dispersed combat groupings, will be countered with accurate low yield atomic weapons.

Mobile striking forces will be employed on the ground or through the air to accomplish counterattacks against major enemy penetrations,

"The blast, fire and radioactive fall-out of a single overnight attack by a thousand modern weapons suitably directed can decimate the population of any nation, level its factories and render its land at least temporarily uninhabitable.

"The principal contenders, the Soviet bloc and the West, can ill afford to tap this power, since its use by either side means instant retaliation by the other and leaves little doubt as to the ultimate destruction of both."

"Earth Satellites and Foreign Policy," by Lloyd V. Berkner in Foreign Affairs Magazine, January 1958.

closely following atomic fire support. Counterattacking forces will destroy enemy forces, regain control of critical areas, and exploit successes gained. As in the offense, the primary objective of maneuver will be to find or create atomic targets, then deliver and exploit appropriate fires. Defensive forces must exploit protective cover as well as concealment. However, the integrity of the defensive position will be maintained best through counter-offensive action combining mobile forces and massive firepower to maintain the initiative.

Both atomic and nonatomic capabilities will be provided in the fire support available to Army forces. Fire support systems will be disposed in depth and emplaced sufficiently far from the area of contact to be relatively safe from minor penetrations, yet will be capable of firing throughout the depth of the battle position.

GOALS

THE Army will continue to improve its capabilities for limited war. Pentomic organizations will be made more effective through the progressive introduction of new weapons and equipment and through organizational refinements based on experience, experimentation and test.

The Army's concepts for limited war make imperative the attainment of the following goals:

Firepower. Basic tactical elements must be provided lightweight, mobile conventional and atomic firepower of increased range and lethality. Support systems must have the requisite mobility to accompany units on the ground or through the air. Where practicable, weapons systems must have the capability to deliver either atomic or conventional warheads. Great accuracy is required to permit use of atomic weapons in close support of friendly troops and to avoid overdestruction of targets.

"For I am more afraid of our own mistakes than of the enemy's designs."
Pericles, as quoted by Thucydides

Missiles and rockets will progressively supplant conventional artillery at division and higher levels. However, the ability to deliver accurate, sustained conventional fires must be retained and improved.

Mobility. In this area, the basic goal is to provide a mobility differential over the enemy. Army forces must have the ground and air mobility required to enter combat rapidly at a point of their own choosing. They must not be immobilized by the necessity to protect fixed land lines of communication. A wide radius of action is required, in addition to a capability for cross-country movement over any type of terrain. Except for the heaviest elements, Army forces must be air-transportable in aircraft which can operate from unprepared landing areas.

Attainment of this degree of mobility requires major improvements in two fields—

First, the Army needs lightweight, armored, air-transportable vehicles with true cross-country mobility which provide protection and speed of movement.

Second, the Army needs improved air vehicles which are low-flying and capable of vertical or

short takeoff and landing in selected, unprepared areas. Such air vehicles are an extension of ground transportation designed to avoid obstacles to more conventional forms of ground movement.

Air Defense. The Army requires a family of air defense weapons designed to provide air defense of the combat zone with far greater effectiveness than heretofore known. This will be essentially a missile defense–in–depth, designed to deny the air space to enemy forces. The Army has eliminated air defense weapons from its divisions and pooled them at corps and field army levels, in order to make divisions more mobile and flexible. Army air defense means will be coordinated with other systems—ground fire support, Army and supporting aircraft, and electronic means—at a tactical operations center or other coordinating agency at the field army and corps headquarters.

Other Service Support. Of primary and immediate importance is the need for versatile long-range aircraft for the deployment of United States forces in limited war. Also required is a modernization of tactical or troop carrier aircraft in consonance with technological advances. In general, aircraft designed for strategic and tactical airlift also can successfully perform the air logistical role required by logistical concepts. The most important single criterion for aircraft providing tactical lift is the ability to land and take off in short, selected areas independent of extensive engineer construction.

Aerial reconnaissance and target acquisition support, in terms of information desired and the time limits within which it must be provided, is another Army requirement. The Army is developing organic capabilities for combat surveillance which will progressively reduce the support required.

Future availability of guided missiles of advanced design will permit these weapons to progressively replace manned aircraft in the close-support role. However, until missile progress is much more advanced than at present, the Army will continue to have an important requirement for close air support and reconnaissance systems which will be effective in meeting the requirements of limited war.

THE concepts and goals, as summarized here, reflect Army endeavors to create the organizations and techniques essential to the conduct of future land battles. In themselves, these concepts are incapable of turning a wheel or projecting a nuclear payload to its target. Their translation into effective battlefield capabilities depends, as a first step, on the provision of weapons and equipment not now available.

But the goals are attainable and technology can provide the means. Progress toward these goals, while evolutionary, will directly depend on adequate budgetary support and on the full support of the other armed services.

"Retaliation is certainly just and sometimes necessary, even where attended with the severest penalities; but when the evils which may and must result from it, exceed those intended to be redressed, prudence and policy require that it should be avoided."

General George Washington in a letter to the President of the Continental Congress, 1 March 1777

". . . . We must stay alert to the fact that undue reliance on one weapon or preparation for only one kind of warfare simply invites an enemy to resort to another. We must, therefore, keep in our Armed Forces balance and flexibility adequate to our needs."

President Dwight D. Eisenhower, Address on the State of the Union, January 1955

THE U.S. ARMY—A KEY TO PEACE

ARMY INFORMATION DIGEST

JULY 1958

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JUN 17 1958
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TLIGHT ON THE MEDITERRANEAN

A SPECIAL SECTION Page 47

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ARMY INFORMATION DIGEST

THE OFFICIAL MAGAZINE of the DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern.

THE DIGEST is published under supervision of the Army Chief of Information to provide timely and authoritative information on policies, plans, operations, and technical developments of the Department of the Army to the Active Army, Army National Guard, and Army Reserve. It also serves as a vehicle for timely expression of the views of the Secretary of the Army and the Chief of Staff and assists in the achievement of information objectives of the Army.

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On watch in the Apennines

SETA

PILOT ORGANIZATION FOR THE FUTURE

Major General H. H. Fischer

"THE ARMY IS PLANNING SIX ATOMIC SUPPORT FORCES SIMILAR TO THE ONE NOW LOCATED IN ITALY."

THIS statement, appearing frequently in the news in connection with the defense budget, exemplifies the general trend of military thinking and planning since Korea —a reorganization of forces together with an undiminished maintenance of the Army's world-wide commitments. References to the force in Italy focus attention on an organization that is unique in concept, makeup, and mission—the United States Army Southern European Task Force, known as SETAF.

What is SETAF? Primarily, it is a combat-ready atomic-capable support force deployed as part of the NATO defensive elements stationed in Northern Italy. However, due to this unique employment as the first atomic-capable support force operating alone in a foreign country, it has been cast in a much larger mold.

In addition to maintaining a constant combat capability, SETAF is charged with the following additional and equally important missions:

- Developing the organization, tactics, and techniques of a U. S. Army missile command.
- Performing the numerous

DEPOSITED BY THE
UNITED STATES OF AMERICA

housekeeping, administrative, and logistical functions normally associated with a Theater Army Command.

• Creating and preserving a feeling of fellowship and mutual respect with its partners in NATO, the Italian people.

SETAF is a young and vigorous command, unhampered by traditional methods and outmoded ideas. Organized in October 1955 from elements made excess by the phase-out in Austria, it immediately undertook an entirely different role. No longer was it a portion of a large command dealing with a well-established occupation mission. It now was confronted with an artillery support role to include an atomic capability.

Transformation of this relatively unorganized force into an effective atomic backup element required the best efforts of all concerned. Addition of an atomic capability to the vital Italian defenses in the Alps was urgently needed.

Organizationally, SETAF has always consisted of three essential elements—a combat force, a logistical support echelon, and an overall command headquarters. Ini-

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MAJOR GENERAL H. H. FISCHER is Commanding General, U. S. Army Southern European Task Force.

A soldier completes adjustments on a Corporal missile preparatory to firing it in a NATO exercise.

tially, the combat element consisted of a reduced Infantry regiment supported by an Honest John battery and an Engineer company. This organization was essentially a modernized version of the Regimental Combat Team that had rendered such outstanding service in World War II and Korea.

IN preparation for warfare in the atomic age, complete revamping was necessary. Likewise, the Infantry-heavy posture had to give way to greater emphasis on the missile and rocket units. The area of employment is wide and in order to provide adequate support for the entire Italian front, every man must contribute directly toward placing the rockets and missiles on the enemy position. Accordingly Honest John and Engineer elements were expanded, Corporal units were added, and the Infantry strength was reduced.

Each step was carefully tested and studied for strengths and weaknesses in order to define properly the next step. Repeated field exercises in various terrain, weather, and tactical situations dictated the necessary organizational changes. Despite the difficulties of deploying, training, organizing, and reorganizing, SETAF maintained its combat readiness throughout all this developmental period.

TACTICAL FEATURES

IN the process of revising the organization, SETAF learned many tactical lessons. In a missile support force, there must be a fusion of tactical and logistical elements unheard of in former days. Ordnance support is required to be in the "hip pocket" of missile units. Signal communications in the many functions of target acquisition, command, and control must be coordinated exactly.

Whereas in SETAF Infantry mass is a luxury that cannot be afforded, the missile artillery in the wide open warfare of tomorrow's "no front line" battlefield must have close-in Infantry protection responsive to its mobility and multifarious employment or it will be destroyed. Many other equally important tactical principles are constantly being brought to light.

Throughout its existence, SETAF has stringently resisted all temptations to become large, cumbersome, or immobile. To create each new organization a fixed overall manning level has been maintained. Spaces have been taken away from marginally

productive areas in order to create vitally needed elements. Each change has been dictated by the necessity for tailoring the unit to perform the task of providing missile support, with an atomic capability, while operating alone in a foreign country.

In keeping with these objectives, the normal Missile Artillery Rocket Group Headquarters was eliminated and its function added to those of the Missile Command Headquarters. The three Infantry companies provided as security elements for the fire units have been made an integral part of the artillery battalions they protect.

Likewise, the Italian Army has assisted materially in the efforts to eliminate nonessential tasks in order to enhance SETAF's capability as an artillery command. Italian Army units cooperate with SETAF in many ways, such as providing additional security for isolated elements and protection for the line of communications. The spaces saved by these measures have made possible the organization of a Sky Cavalry Battalion which has been assigned the vital target acquisition mission.

DEPLOYMENT

SETAF's line of communications starts in Livorno, extends northward over the Apennine Mountains and across the Po Valley 220 miles to the Headquarters at Verona. From there it extends forward an additional 32 miles to Vicenza where the majority of the units that make up SETAF's combat power are located.

Practicalities of distance, available communications, and facilities have dictated in some degree the location of the various units. The port of entry is at Livorno; the Headquarters of the NATO Commander who exercises operational command over SETAF is in Verona; and the combat deployment areas are north and east of Verona and Vicenza where the gaps and passes in the Alps have formed the historic invasion routes into Italy.

> *". . . Small independent atomic forces can be employed and sustained for indefinite periods in foreign lands working in close support of indigenous forces. . . . SETAF is confident that, as a small pilot unit, it is making important strides toward a tomorrow that is here today."*

AS a result of the evolution and experimentation SETAF today con-

A lieutenant "lays in" a Corporal missile before it is fired by a SETAF battalion in Northern Italy.

sists of a Logistical Command (Missile) located at Livorno, with forward supply responsibilities in the Verona and Vicenza area; SETAF Headquarters located at Verona; and the First U. S. Army Missile Command located at Vicenza. This deployment affords SETAF a framework from which to employ its devastating power in any future war. Likewise, lessons learned in its day-to-day operation as an atomic-capable support force should contribute materially toward the further development of Army doctrine for atomic age warfare.

As stated previously, SETAF assumed expanded proportions due to functioning in large measure as a miniature Theater Army Command. As the sole United States land force in Italy, it has only itself to rely upon for all the activities and support normally provided by the theater command, such as ports, depots, posts, hospitals, dependent schools, and numerous other logistical and administrative functions. These activities, though individually small, correspond numerically and in variety with the functions of any major theater of operations.

In accomplishing these administrative tasks, SETAF has lived within an austere manpower ceiling. This has complicated the task to a degree. However, by combining functions and minimizing the effect of distance through the employment of rapid means of transportation, efficiency has been achieved. At the same time, capability has been retained for rapid expansion, in the event of sudden war, to a theater of operations of any size that may be required.

TRAINING METHODS

AN additional problem of great concern to SETAF has been the complete absence of adequate training areas for the accomplishment of an effective training program. Italy is a country of great population density and an extreme shortage of arable terrain. A training installation of the Fort Benning, Sill, or Bliss variety is unobtain-

able. Troops are billeted in small compact *"casermas"* located in the outskirts of sizable towns. These installations barely provide the essentials for housing and living. Any training, even small unit problems, conditioning marches, and small arms firing, is accomplished with great difficulty.

Despite all obstacles, SETAF has always retained a high degree of immediate combat readiness. This has been done by adopting the methods used by the Italian Army. Suitable terrain is legally borrowed from its private owners for a training exercise or maneuver. Safety zones and other precautions are established according to normal U. S. Army practice. As necessary, and assisted by the Italian Army, the local inhabitants are removed from their homes and farms for the duration of the exercise. After completion of the maneuver, a joint Italian-United States claim team moves in to settle immediately for any damage inflicted. This method has made possible successful range practice and firing exercises for all weapons up to and including the Honest John rockets.

THE Italian setting has been responsible for another serious training challenge. Cities and roads stemming from the ancient civilization and culture of Italy are not designed for modern, high speed, mechanized traffic. The quaint, narrow streets, the steep mountain defiles, and numerous scooters, bicycles and carts make a hazardous setting for the oversized military vehicles of today and tomorrow. By careful driver selection and training, and constant command emphasis on safe road practices, the SETAF accident rate has been kept very low.

> *"The army of tomorrow will be required to deal in the economy of small, compact forces, the common sense of measured, precise, firepower, and the strategic and tactical adaptability of mobile, independent task forces. Such forces may have to be stationed in extremes of climate and terrain, far from the shores of the United States and far removed from the highly organized theaters of operations as they have previously been known."*

COMMUNITY ACTIVITIES

SETAF is not an occupational force. It entered Italy long after the peace treaty ending World War II was signed. The Italian nation is a sovereign and co-equal nation with the United States and the other members of the North Atlantic Treaty Organization. SETAF came to Italy as an invited foreign force. Italian officials readily admitted that the re-entry of the Americans was cause for some concern on the part of civic leaders. All foreign armies traditionally are unpopular. The hope was that the Americans would not become unwelcome guests. As the embodiment of the United States to the people of Italy, SETAF had a great responsibility to put the nation's best foot forward.

In everything that was done—on duty, in garrison, in the field, or during periods of recreation—the soldiers were the object of great in-

American and Italian soldiers cooperate to establish a professional attitude and sense of harmony.

terest on the part of the host nation. However, two factors assisted materially in turning this fact from a liability into an asset.

FIRST is the professional attitude of the SETAF troops and their Italian counterparts. The American soldiers are justly proud of their advanced and unique armament, their combat readiness and high state of training. They are glad to demonstrate their skills to the appreciative and interested Italian Army.

The Italians, on their part, have had many a SETAF soldier as a guest at installations of the famed *Bersaglieri* or Alpini. SETAF troops attend courses of instruction in the Italian Alpina warfare school at Aosta where they learn skiing and mountain warfare at an institution that has no peer. In fact, several Americans have been successful in earning the coveted Alpini hats.

Italian Military Police, the famed *Carabinieri,* have a unit on duty as an integral part of the SETAF organization. They greatly assist the Americans by guarding installations, escorting motor columns, and sharing in the conduct of honor guards and other ceremonies. American Military Police and Italian *Carabinieri* share in the control of United States and civilian personnel in their off-duty contacts. The end-product of this close cooperation is a completely professional attitude and sense of harmony between SETAF and the Italian Army units that it supports.

A SECOND and equally important factor is the feeling of goodwill which exists between the Italian populace and SETAF personnel. This is no mere arrangement on a command or diplomatic level. It has its beginning and its authenticity in the grassroots.

Being small, SETAF has no large executive-type community relations organization. Instead, it encourages an interchange of acquaintance and goodwill which, in two years has generated a healthy climate of mutual respect.

SETAF has no "American Village" housing inclosures. American families live among the citizens of Livorno, Vicenza, and Verona, and the soldiers find their off-duty recreation in the local Italian community; often they visit with Italian families in their homes.

The ever-generous nature of the American soldier has also contributed materially. Practically every battalion and separate company has, on its own, assumed sponsorship of orphanages or hospitals. This inborn friendliness that characterizes American soldiers everywhere has turned previous misgivings into an unqualified welcome and has served to disarm the skeptics among the local population.

Disciplinary problems have been carefully controlled. By prompt official action and complete cooperation with the Italian authorities, the effect of infrequent incidents has been minimized. The Status of Forces Agreement between the United States and Italy has served as the basis for legal contact between the two nationalities. Its sensible and sympathetic application by both countries has assisted greatly in smoothing the rough spots that occasionally arise in any command.

"Anyone who would understand what SETAF is must understand the community relations phase of its existence, for this is what gives substance to the NATO idea. SETAF feels that the power of human understanding is greater than any atomic force."

American personnel have actively participated in the everyday community activities. A Sergeant First Class in Verona is the coach of Verona's own Italian baseball team. Last year, SETAF's baseball team played against the Italian team of Florence in Italy's first night game.

"The ever generous nature of the American soldier has contributed materially in maintaining good community relations."

Joining in the local scheme of things athletically, SETAF soldiers have enthusiastically adopted soccer. This game, which enjoys an enormous following in Italy, is unfamiliar to most Americans, but SETAF troops learn it and play it. Needless to say, the American teams are usually soundly defeated by the more experienced and adept Italian team. Nevertheless, the seeds of friendship are sown. Games may be lost but friends are made.

SETAF constantly extends every effort to cooperate with its Italian ally in every possible field—military, cultural, social, and economic. The daily life of the SETAF soldier is based upon attitudes and actions designed to accomplish this objective. The citizens of the Veneto district are thus becoming acquainted with a third generation of Americans whose parents and grandparents they knew in the two World Wars.

ALLIED COOPERATION

THE essence of the North Atlantic Treaty Organization is the voluntary mutual assistance of the signatory powers to build up strength collectively—a task which would be beyond the power of any one, singly, to achieve. The voluntary mode of this exchange reflects the great difference between the Free World and the Communist way of doing things. Anyone who would understand what SETAF is must understand the community relations phase of its existence, for this is what gives substance to the NATO idea. SETAF feels that the power of human understanding is greater than any atomic force.

"In a missile support force, there must be a fusion of tactical and logistical elements unheard of in former days."

As a result of the emphasis on community relations, SETAF, while furnishing atomic-capable fire support to the Allied Land Forces of Southern Europe, is at the same time writing a new chapter in the historic friendship between Italy and the United States.

THE Army of tomorrow will be required to deal in the economy of small, compact forces, the common sense of measured, precise firepower, and the strategic and tactical adaptability of mobile, independent task forces. Such forces may have to be stationed in extremes of climate and terrain, far from the shores of the United States and far removed from the highly organized theaters of operations as they have previously been known.

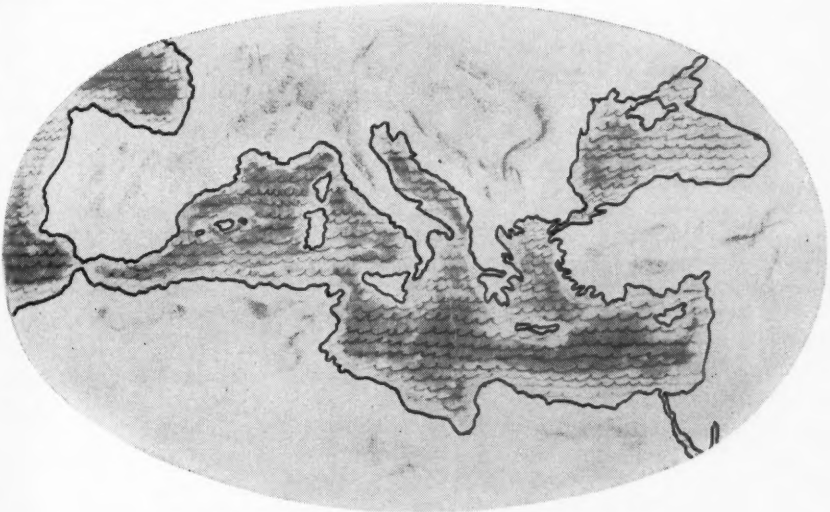
Through two years of valuable experience, SETAF has learned that the U. S. Army is quite capable of adapting itself to meet the challenge of the future. This experience has shown that small independent atomic forces can be employed and sustained for indefinite periods in foreign lands working in close support of indigenous forces.

The American soldier quickly responds to training in the armament of the atomic age. Likewise, when well informed, he readily subscribes to and takes cognizance of customs and standards of conduct that make possible his living in

Advancing the cause of international goodwill, the author publicly thanks Italians who rescued crew of a wrecked American plane.

harmony with those who will be his allies during war.

Today SETAF's life in Italy is one of constant change. Its troops are engaging in alerts, field problems, and NATO combined exercises, returning to critique, revise, and retrain where deficiencies are indicated or where experience has shown that the mission can be accomplished in an improved manner. In this process, SETAF is confident that, as a small pilot unit, it is making important strides toward a tomorrow that is here today.



SPOTLIGHT ON THE MEDITERRANEAN

THE preceding article and those following focus attention on the U. S. Army's activities as builder and defender in the historic Mediterranean area. The Spanish Army also is considered as another facet of defense against Communist aggression in that key area.

Supported by SETAF

LANDSOUTH—

Guardian of Italy's Northern Frontier

Allied Land Forces Southern Europe—the North Atlantic Treaty Organization command which is supported by SETAF—is commonly referred to as LandSouth. Possessing atomic capabilities, it is commanded by General Alessandro Albert, with headquarters in historic Verona serving as a nerve center for ground forces committed to NATO in the Italian area of Southern Europe. It operates as a principal subordinate command under Admiral Robert P. Briscoe, Commander in Chief, Allied Forces Southern Europe.

The LandSouth command is a vital part of the NATO shield which provides a powerful combined force of land, sea and air strength guarding the Free World. Its immediate area of responsibility on Italy's northern frontier is a region of rocky, towering, snow-capped peaks that has been the avenue of invading armies through history.

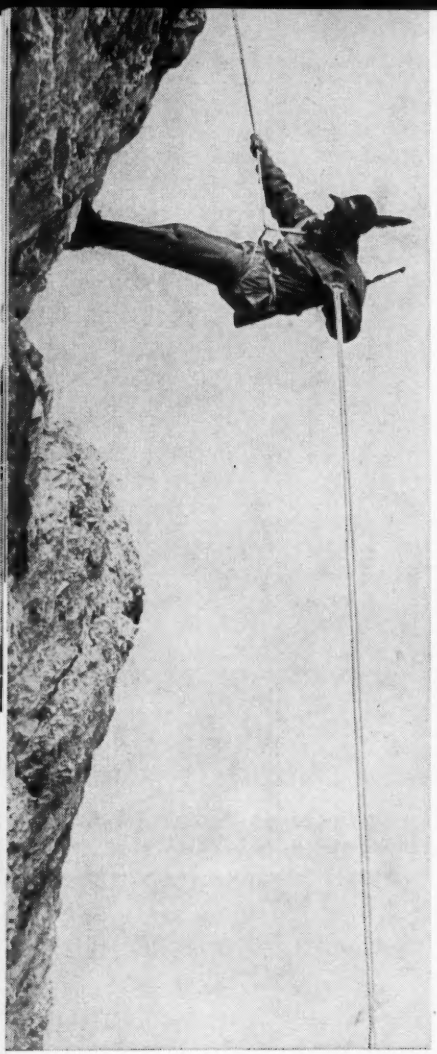
At General Albert's disposal are some of the world's finest and best trained mountain fighters, the Italian Alpini. Brigades are assigned to LandSouth, forming a strong force ready to oppose any potential enemy seeking to penetrate the northern boundary.

Units are equipped with modern weapons in the hands of skiers, parachutists and other mountain troops. Mountain artillery is hauled by mules to give added firepower.

At the foothills of the Alps and the Dolomites, crack Italian armored and artillery divisions form a second barrier of defense. Italian armored units include the fleet *Bersaglieri* regiments to provide swift assault troops.

All of these troops are supported by the Southern European Task Force, which provides missile and rocket battalions for close artillery support to the Italian ground forces.

At the Alpina Military School, Italian mountain troops go through rugged training, sometimes joined by United States personnel from SETAF.



Italian mountain troops receive rugged training at famed Alpina Military School.

Italian General Albert (left) and Maj. Gen. Harvey H. Fischer, Commanding General of SETAF.

Modern armored unit fords swift mountain stream in maneuver near Pordenone.

Bersaglieri give LandSouth forces armored infantry assault power (above) while surefooted mules give mobility to Alpini in rugged mountain areas.

In support of the U. S. Army and Air Force and military aid programs, the Corps of Engineers conducts an energetic, wide ranging program of

Construction in Theater

Brigadier General L. J. Lincoln

IN mid-summer 1957, a four-star general of the United States Air Force stepped out of his plane on a concrete parking apron in Karachi, to be greeted by a senior officer of the Pakistan Air Force. In the informal conversation which followed, the general commented on the excellence of the runway and added, "I wish all our runways were like that." He was astonished when told that the runway at that remote location had been built by the U. S. Army Corps of Engineers.

The Karachi project is but one of the many achievements of the Mediterranean Division of the U. S. Army Corps of Engineers, whose projects extend from Morocco to the Khyber Pass, from the Italian Alps to the South Atlas, and from the Black Sea to the Eritrean Hills south of Sudan. In six years, nine nations in this vast region have seen the Engineer Castle on scores of construction sites.

In the performance of the Division's task, hundreds of thousands of individuals—people of more than 30 nationalities and from each of five great religions of the

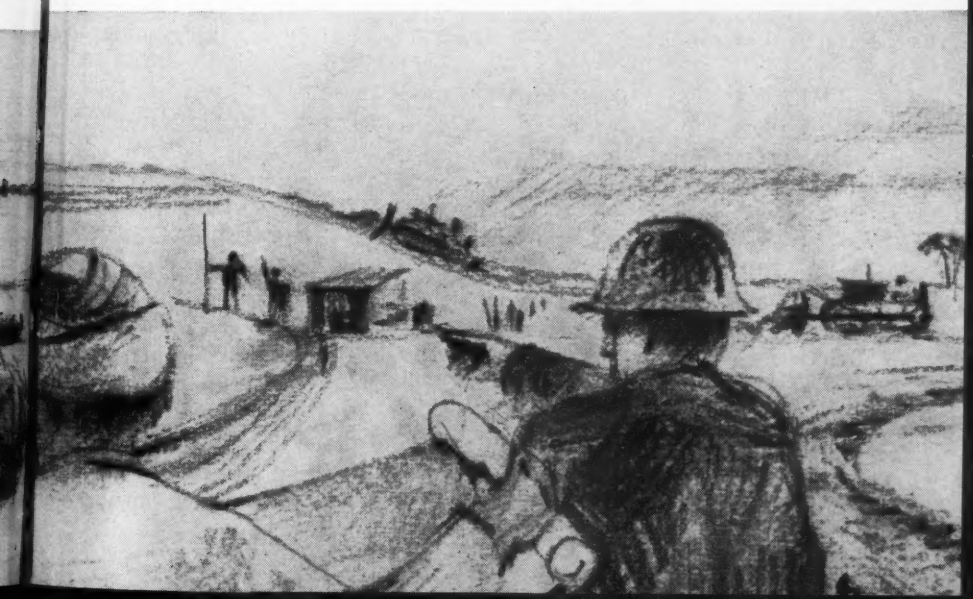
BRIGADIER GENERAL LAWRENCE J. LINCOLN, Division Engineer, U. S. Army Engineer Division Mediterranean, has been newly assigned to the Office of the Deputy Chief of Staff, Logistics, Department of the Army.

Cold War Operations

world—have worked together on military projects in the rugged mountains, the flat, fertile plains and under the desert sun. With materials and equipment from diverse sources, and utilizing the labor of this army of workers, the Division builds not only for the support of United States military forces, but also for that of our Allies, as part of our Government's program of military assistance.

THE Mediterranean Division, which moved to Leghorn, Italy, in late 1957, began its role in the North African and Eastern Mediterranean area on 14 February 1952 upon its activation in Casablanca, Morocco. Construction in Morocco had been initiated early in 1951 under the East Atlantic District, and continued there on the greatest single military project in the history of the Corps of Engineers, the Moroccan airbase complex. From that sometimes maligned, but most successful, "crash" undertaking, the Division has long since reverted to the more orderly procedures of peacetime and cold war operations. It has expanded its responsibilities to other countries and projects.

The Mediterranean Division's early mission involved direction of three District offices, which had supervision over construction in



Ancient farming methods contrast with an F-86 jet as Arab camel master plows between two newly constructed runways in North Africa.

five countries with work-sites at a score of localities, extending from Morocco to Libya, and into Turkey, Saudi Arabia and Eritrea. Currently the Division's operations are carried out through five Districts, with offices in Leghorn, Italy; Nouasseur, Morocco; Tripoli, Libya; Tehran, Iran; and Karachi, Pakistan.

THE Division is close to the cutting edge of our foreign policy, as it operates over thousands of miles of a highly critical area in the cold war struggle. As the cold war becomes more intense in the Middle East, Soviet efforts at penetration have increased. This has been highlighted by a recent Soviet-Syrian pact calling for substantial Soviet assistance in a construction program in excess of $450,000,000. This program and similar activity in the heart of the Division area creates an acute awareness of the Division's role in countering the influence of Soviet undertakings.

IN Moslem countries, where most of the work is located, it is necessary, through United States construction power, to pioneer in bringing the jet age to lands and to a society under the Koranic influence. These lands seem partly modernized, but have not quite escaped from the camel and the donkey era.

As one moves across the lands, and even the actual construction sites, he encounters scenes differing little from those of Kipling's *Kim* or, in some areas, the Bible. Nomads in their travels may brush elbows with the instrument men surveying with a modern transit. In such an environment the execution of major construction projects is unusually difficult and, in the light of the cold war implications,

takes on a dimension of great importance.

As in any organized effort, people are the key to success. In early 1958 the personnel of the Division and District offices amounted to about 800 U. S. career civilian employees and 80 military officers, plus 900 local employees. These figures do not include the thousands of contractor personnel.

In the chain of command, the Mediterranean Division Engineer is an overseas commander reporting directly to the Chief of Engineers, Department of the Army. The Division Engineer and District Engineers exercise command responsibilities over the service personnel and government employees who, teamed with engineering and construction contractors, execute the mission of the Division.

TRAVEL to inspect and assist the field operations is of vital importance to the successful operations of the Division. Although normally performed individually, such travel is sometimes done in groups. Recently, for example, the Division Engineer and members of his staff completed a semi-annual command inspection of all major projects within the Division.

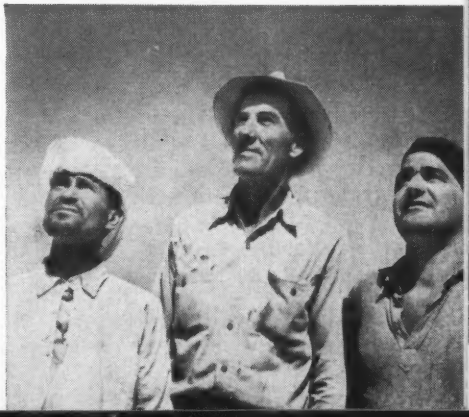
Prior to departure, each member received every inoculation regularly used in the United States military establishment. Ten visas had to be obtained on each passport, and a dozen different currencies were required at different and fluctuating rates. Starting in Italy where construction is underway on United States Army and Navy facilities, the party travelled over 11,000 miles by C-54 plane.

" . . . Many of the unique situations encountered may, in their solution, pay unexpected and important dividends to basic American objectives. . . . The safety program clearly demonstrates to our overseas allies that America is putting into effect its frequent and basic claim of high regard for individual human life and welfare."

The inspection group checked on administration, security, accounting, personnel and other matters normal to any command inspection. However, actual construction received most attention.

During the trip, major projects in various stages of progress were inspected in nine countries. Almost completed are the Moroccan and Libyan airbases, the United States Army signal facility at Asmara, and the Air Force communications facilities on the island of Crete. The party inspected construction of the Dhahran airbase

People of more than 30 nationalities, five great religions, work together. Below, an Arab, an American and a Frenchman survey their handiwork.



Pakistani workers use age-old methods to forge bolts for construction.

which was completed in 1956. New work is now being planned in Saudi Arabia.

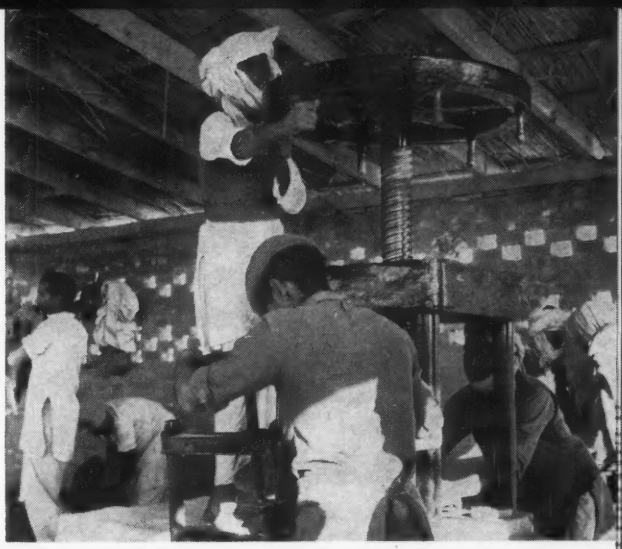
In several days' time, ranging over thousands of miles within Iran and Pakistan, inspections were conducted of relatively large construction projects which are being built as a part of the United States Military Aid Program, for eventual utilization by the armed forces of those nations. Stops in Turkey showed progress on scattered projects which are being built for our forces under difficult working conditions. At a final pause in Athens, progress and quality were checked on additions to the airfield there for use of the U. S. Air Force.

WHILE supervision and management from the Division level is a complicated and vital function, the District also has a most difficult role in direct administrative and operational responsibility for getting the job done.

In addition to being commanders, the District Engineers are contracting officers. The relation of District Engineer to the various contractors and their employees is not a command relation; nevertheless the extraordinary conditions imposed by geopolitical, physical and military factors require supervision and teamwork considerably beyond that practiced in the United States.

Teamed with the Corps, American and local contractors in the last six years have constructed facilities costing over $600,000,000. The books show a total of more than 232 million man-hours of work, which on the basis of a forty-hour week would amount to an average work force of more than 18,000 men. The current average is much larger. Most of the workers are local nationals employed by contractors. Only ten to fifteen percent of the total contractor work force are Americans.

IT IS the Districts and their contractors who are in the arena, and it is they who must grapple with the myriad daily obstacles and international complications on both the local and national levels. Shipping delays, unusual customs practices, strange tongues, poor or non-existent roads and railroads, poor telecommunications — these



An old-style hand press turns out floor tile at construction site in Pakistan.

are but a few of the vexing problems encountered.

An example of such complications was the closing of the Suez canal which occurred during the mobilization of personnel, equipment and materials for the first multi-million-dollar contract in Pakistan. The Suez troubles interrupted this flow at a most critical time. Vital construction equipment destined for Karachi was already aboard ships in the British Isles, but was off-loaded to make the shipping facilities available for British military operations. Construction schedules, estimated costs and fond hopes for a quick, impressive achievement were shattered, demanding a complete reappraisal of the situation.

Nor was it necessary to look east of Suez for adverse effects of the Canal's closure. Urgently needed runway paving at Wheelus Airbase in Libya was delayed because shipping could not be obtained to move essential equipment there from Morocco.

AN illustration of a complex situation with international overtones is the Corps construction project for an Iranian Army unit. The prime contractor, as for the other projects in Iran, is a joint venture of American firms with Iranian subcontractors doing much of the work. Some equipment and material is being trucked overland from Beirut through Syria and Iraq, and more may soon start arriving through the distant Black Sea port of Trabzon, Turkey.

Bricks and lime in great quantities are made on the site, but all equipment and most material, such as steel and cement, must be imported from distant sources. Skilled labor comes from or through Tehran, which is a two or three day journey by bus or auto. It is esti-

> *"The Division is close to the cutting edge of our foreign policy. . . . As the cold war becomes more intense in the Middle East, Soviet efforts at penetration have increased. This . . . creates an acute awareness of the Division's role in countering the influence of Soviet undertakings."*

mated that 8,000 to 10,000 local workers will be required at the peak of construction, and they must all be fed and sheltered at the work-sites.

IN THE shadow of Russia, and doubtless under the surveillance of Soviet intelligence, the Area Engineer must exercise supervision of his staff of inspectors as well as contractor personnel to maintain security, progress and quality of work. He must do much more, however, for he is dependent on and must maintain effective relations with the Iranian military commanders and Kurdish tribal leaders in the region.

It is not enough that the Area Engineer be an engineer and builder; he must also be a soldier and a diplomat. He must be particularly adept in local public relations in an area which has been controlled by the central government in Tehran for less than a generation, and where he encounters a natural skepticism towards foreigners, deepened by memories of the 1946 Soviet occupation.

Happily, many of the unique situations encountered may, in their solution, pay unexpected and important dividends to basic American objectives. As an example, there is the Corps Safety Program. Around the globe, the Corps of Engineers conducts an enlightened, vigorous and effective safety program as part of its construction activity. The long-range results are increased economy and efficiency of operations. In addition, the safety program clearly demonstrates to our overseas allies that America is putting into effect its frequent and basic claim of high regard for individual human life and welfare.

Another indirect benefit is the success of multi-people teamwork in the field. In the Division's operations, people of many countries and religions work shoulder-to-shoulder with less trouble than may be encountered between different groups in the United States. One work camp now contains men of twenty nationalities, and has not registered a major crime.

Perhaps the most important indirect benefit arises from the fact that the Division construction program has produced a tremendous number of skilled and semi-skilled workers in construction and related trades.

HAND IN HAND with the indirect benefits resulting from introduction of American mangement,

"At today's fast and changing pace, a facility is often critically needed before the Corps of Engineers has received any directive to initiate design. . . . It seems incongruous to wait until a new plane is operational before starting to build its runways or fueling systems; or that a unit should be ready for deployment before its facilities are even programmed for construction. In a cold war situation, it seems folly to wait months or years for funds to initiate design on facilities which have long since become operationally vital or essential to meet high-level political commitments."

Libyan laborers carry a structural concrete beam to be installed in a building at Wheelus Air Force Base.

organization and procedures, have been the marked advances in professional and technical engineering and construction methods.

American personnel, for their part, have encountered unusual and challenging situations in design, materials, construction standards and methods. Facilities to be used by United States Armed Forces are normally constructed by standards and specifications comparable to those of United States facilities. Such standards would apply to heavy-duty airfield pavements or highly technical refueling systems at some far-flung outpost of the Mediterranean Division, since design and construction criteria are usually identical with similar American facilities.

Design criteria for a horse-stable for an Iranian army unit, on the other hand, would be more closely in line with Iranian standards, but improved in economy and utility by American engineering know-how. Yet, on the same project, the hospital or sewage treatment plant will, in all probability, have many stateside features.

Throughout the Division, continuous engineering studies and analyses are directed towards utilizing local materials, construction methods and skills for maximum exploitation consistent with sound engineering practices. A frequent comment, in these ancient lands, is that the methods of thousands of years should be pretty sound and economical. Certainly, time-honored methods are worthy of consideration. However, it would be folly to follow them blindly and cast aside the existing structure of engineering and construction know-how.

The engineer's task is affected by the fact that not only are we in a new era of science and engineering in military affairs, but also that new needs and new considerations of human welfare must be taken into account.

Good design is the essential

Amid waving desert palms, Engineers supervise construction of a chapel for Armed Forces personnel at Wheelus Air Force Base, Libya.

basis for good and economical construction. When it has been accomplished, and hundreds of sheets of drawings and specifications are ready, a contract is awarded for construction. On a major project, this may be about a year after the design is initiated.

Most of the large projects are awarded on a lump-sum basis to American firms which sub-contract simpler portions of the work to local firms. In some countries international construction agreements will not permit American firms to compete, and local firms are utilized. This method of contracting can be successful where local capabilities are higher, as in Italy. Local firms and workers, of course, do best on local materials and methods. However, they can be trained for stateside-type work.

In the Mediterranean Division, as elsewhere in the Corps of Engineers, strict but reasonable inspection and supervision is carried out by Government personnel during the contractor's construction phase. Without such inspection, much of the construction would not meet the desired standards.

Even when the construction standard is relatively low as, for example, on *gendarmerie* stations in Iran, the builder is held to the plans and standards prescribed. When the standard is stateside, as on a U. S. Army hospital in North Italy, the importance of building to the required standard is readily apparent. Economy is a keynote but without quality, economy may become false and jeopardize the entire undertaking.

Quality and economy are usually achieved, but as a builder in the field, one sees a valid and pressing need for more speed and versatility in constructing to meet the operational needs of our Government and to avoid being outpaced by

our opponents in the cold war. The most constant concern and source of dissatisfaction encountered in the construction program is inability to complete the required facilities quickly enough to satisfy the real need.

WORKING closely and harmoniously with the using service and with American and local contractors, the planning and supervisory staffs of Mediterranean Division are regularly improving procedures and methods to achieve flexibility, economy and efficiency. However, these efforts can have but a limited value in resolving the basic problem of timing. If there is to be an effective panacea for shortening the three-to-ten-year programming - budget - appropriations-design-construction cycle, it must be found in that portion of the cycle which precedes design.

In a major construction job, a minimum of two to four years is usually required for completion of facilities from the time funds for design are made available, regardless of the actions of the design and construction agencies. Attempts to hurry this phase usually result in sacrifices in quality and economy without compensating savings in time. Even costly "crash" measures can be expected to effect appreciable time savings on only a small number of most critically needed items.

AT today's fast and changing pace, a facility is often critically needed before the Corps of Engineers has received any directive to initiate design. From the builder's point of view, it seems incongruous to wait until a new plane is operational before starting to build its runways or fueling systems, or that a unit should be ready for deployment before its facilities are even programmed for construction. In a cold war situation, it seems folly to wait months or years for funds to initiate design on facilities which have long since become operationally vital or essential to meet high-level political commitments.

"The relation of the District Engineer to the various contractors and their employees is not a command relation; nevertheless the extraordinary conditions imposed by geo-political, physical and military factors require supervision and teamwork considerably beyond that practiced in the United States."

In this light, it is well to pause and ponder the timing and effect of the "showpiece" Soviet assistance programs in Egypt-Syria, Afghanistan, North Africa and elsewhere. Undoubtedly we should not ponder too long, lest it be too late to maintain that respect and leadership which we now hold.

The whiplash of urgency is now keenly felt. Even though yesterday's needs are still with us, we cannot build exclusively for them. Today, we must enhance our strength by building for tomorrow.

Fierce pride and a fighting heart characterize

The Spanish A

ARMS and equipment in the Spanish Army are still far from modern, but the Spaniard possesses the indispensable ingredient of any soldier—a fighting heart. In the tough and intensely patriotic Spanish soldier, this quality compensates for many materiel deficiencies.

Spain is the first nation of the world to fight and defeat Communism. The Army that vanquished the Communists in Spain is the one with which the United States is now linked in a common cause. Because of its strong anti-Communist ideology and desire to contribute to the maintenance of international peace, Spain has agreed to the establishment on its territory of a United States naval base and a complex of vital United States airbases at strategic points. As a result, the U. S. Strategic Air Command now has the headquarters of a new long-range jet striking force at the western end of the Mediterranean.

Under agreements concluded with Spain, the United States has provided military assistance to the Spanish Armed Forces. The Spanish Army has received tanks, artillery, transport vehicles, recoilless rifles, and communications equipment as its share of the United States military aid and has carried on a modernization program in three divisions and some corps support units.

hArmy Today

THE Army is traditionally the key service in Spain, and each arm and service of the Army proudly cherishes the country's rich military traditions, many of which date back for centuries. Illustrious military figures and historic battles are honored in the names of present-day regiments, such as *"Gran Capitan", "Duque de Alba", "Lepanto".*

An incident from a famous battle that took place in thirteenth century Spain was repeated during the Civil War in one of the most stirring battles fought by the Nationalists against the Red-dominated government. The Communists employed a threat that was used by the enemy in 1294 against the heroic defender of Tarifa, a town in the province of Cadiz, and the Nationalist commander displayed the same high qualities of heroism and loyalty as his historic predecessor.

In July 1936, approximately 1,000 Nationalists under command of Colonel José Moscardó were cut off by the Communists and isolated at the Infantry Academy of Toledo, in the historic Old Alcázar of Charles of Austria, King of Spain and Emperor of Germany. The Communists demanded that Colonel Moscardó surrender the Alcázar, or his teen-age son whom they were holding as a hostage would be killed.

Colonel Moscardó refused and the Communists then put Luis Moscardó on the telephone to speak to his father. In the pathetic conversation that took place, the father counselled the son to commend his soul to God for he would not surrender the Alcázar. Young Moscardó was put to death, as the Communists threatened, but the valiant defenders of the fortress held on until the siege was lifted by Nationalist forces almost two months later.

ORGANIZATION

THE Spanish Army has eight Army corps, comprising twelve infantry and four mountain divisions. An armored and a mechanized cavalry division bring the total number of divisions to eighteen. The Army also has two battalions of paratroopers and a number of corps support regiments of infantry, artillery, engineers, and signal troops.

Units are stationed throughout the Spanish Peninsula, the Balearic and Canary Islands, and in Africa. The mountain divisions are gar-

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"The period of national service is regarded as an honor, and only in exceptional cases, such as the only son of a widow, does any youth ask for exemption. University students may enroll in a military training program comparable to the United States ROTC instead of serving the regular period of military enlistment."

Mountain divisions in Pyrenees go through ski exercises at Mountain School at Jaca.

risoned along the line of the Pyrenees Mountains from Lerida near the eastern flank, to Navarra, on the western flank. Despite the rugged terrain, the mountain divisions are readily mobile, since sturdy mules are used in great numbers.

Strength of the major units varies, usually according to their geographic locations. Some regiments are almost at full strength and others are little more than cadres. The full authorized strengths of all units can be attained in a minimum of time, however, since all details for mobilization have been carefully worked out.

In addition to the traditional types of units found in all armies, the Spanish have 12 battalions belonging to the Legion, or *Tercio de Extranjeros.* Founded in Morocco in 1920 by General Millan Astray to group together soldiers of fortune from all over the world, the Legion has accumulated a record number of martyrs and heroes in its relatively short history. Its motto, "Legionnaires to fight, Legionnaires to die" *(Legionarios a luchar, Legionarios a morir)* implies the final fate of some who enlist in the Legion. It is now composed almost entirely of Spaniards. Several of its units are at the present time fighting in Ifni and the Spanish Sahara against raids by irregular desert tribesmen.

". . . The Spanish Army's training program is designed to transform this raw material into a disciplined combatant who understands the weapons and modern means of warfare, and who knows how to use them to the best advantage when the occasion requires."

RECRUITMENT

ONLY a small percentage of the Spanish enlisted men are volunteers. Conscription dates back to the Constitution of 1812, although the principle of compulsory military service originated in fifteenth century Spain. Most young Span-

Communications equipment received through MAP is studied intensively in field problems.

iards wait until they are called to serve at age 20. The period of national service is regarded as an honor, and only in exceptional cases, such as the only son of a widow, does any youth ask for exemption. University students may enroll in a military training program comparable to the United States ROTC instead of serving the regular period of enlistment.

TRAINING

THE Spanish draftee spends 18 months in the Army in a well-rounded training program. The Army conducts a troop information and education program which includes trips to museums and various cultural centers. An intensive educational program is provided for the small number of youths who at the time of induction are illiterate; thus no one leaves the Army without having received some education.

A great many soldiers acquire trades as mechanics, electricians, radio operators, and the like, which prepares them for civilian occupations when they leave the Army.

THE Spanish soldier's military training is intensive, progressing from individual instruction through various stages of unit training, and culminating in a period of field maneuvers. The Spaniard is by nature a warrior. Every young Spaniard has in him the making of a guerrilla soldier, as was demonstrated so ably against the armies of Napoleon, when this distinctive type of warfare originated in Spain. Consequently, the Army's training program is designed to transform this raw military material into a disciplined combatant who understands the weapons and modern means of warfare, and who knows how to use them to the best advantage when the occasion requires.

One of the outstanding schools of the Spanish Army is the Mountain School at Jaca, which is attended by officers and enlisted men assigned to mountain divisions guarding the Pyrenees. Here all personnel must qualify as skiers and mountain climbers, and special emphasis is placed on leadership and training in guerrilla warfare.

Special troops wear distinctive uniforms, as these tank crewmen with their jaunty black berets and coveralls, preparing for range firing.

ALL officers in the Spanish Army are graduates of the military academies. They may come up from the ranks, but must complete a short course at a military academy before they are commissioned. The majority of the officers are products of the General Military Academy and their selected branch School of Application (*e.g.*, Infantry, Artillery).

Officers are required to attend special courses to qualify for promotion. As in the United States Army, selected officers attend the General Staff School and some attend the United States Army Command and General Staff College at Fort Leavenworth, Kansas.

SOLDIER LIFE

THE Spanish soldier's diet is ample but quite different from that of the American soldier. His noonday meal, for example, includes a glass of red Castilian wine, or white wine from Andalucia. Bread is the chief item in his ration, and when he is provided a can of sardines and a loaf of bread (traditionally called *chusco*, "funny bread", in the army), he is ready for any undertaking. During maneuvers or campaigns the daily ration is augmented by emergency rations based on preserved meats and fish.

The Spanish soldier can choose from a number of activities for recreation during his leisure time. Regimental day rooms for enlisted men are provided at every permanent troop station, as well as reading rooms and other recreational facilities. He may participate in organized sports, which include

football, handball, and basketball. Movies are provided twice a week for his entertainment.

The uniform of the Spanish soldier is modern and very practical. His overseas-type cap *("teresiana")* for example, can easily be converted into a special cap for use in the mountains *("pasamontanas")*. He has a durable field jacket or hunter's jacket *("sahariana* or *cazadora")*, a heavier jacket *("tabardo")*, and a three-quarter length trench coat lined with sheepskin. Special troops have distinctive types of uniforms. The tankers, for example, wear black coveralls and black berets.

"The Spanish soldier's military training is intensive, progressing from individual instruction through various stages of unit training, and culminating in a period of field maneuvers. The Spaniard is by nature a warrior."

SPAIN'S strategic location provides an ideal site for the United States Strategic Air Command's forward bases. The Spanish climate permits year-round operations at the bases; the population is friendly to the United States; and the country is strongly anti-Communist.

The Spaniard defending his country possesses the qualities of a good soldier—fierce pride and a fighting heart. Moreover, he is a staunch ally of the United States.

Antiaircraft gunners learn intricacies of various types of weapons ranging from multi-mount M-55, .50 caliber machine gun, to 90mm gun (below).

ARMY TRENDS

HIGHLIGHTS OF ARMY PROGRESS

RESEARCH ■ DEVELOPMENT ■ WEAPONRY ■ ORGANIZATION ■ TRAINING

STRAC IN READINESS. Composition of Strategic Army Corps—the Army's mobile combat-ready force designed to meet initial requirements of limited war or to provide initial reinforcements in general war—has been announced to include Headquarters XVIII Airborne Corps at Fort Bragg, North Carolina; 101st Airborne Division at Fort Campbell, Kentucky; 82d Airborne Division at Fort Bragg, North Carolina; 4th Infantry Division at Fort Lewis, Washington; 1st Infantry Division at Fort Riley, Kansas, and supporting units. STRAC elements, maintained in continental United States to meet or reinforce initial emergency requirements throughout the world, would be augmented as required to meet specific situations. Signifying its readiness to move promptly to potential trouble spots, STRAC's newly adopted slogan is "Skilled, Tough, Ready, Around the Clock."

ANOTHER EXPLORER IN ORBIT. Of the three Army Explorer satellites sent aloft by Jupter-Cs on 31 January, 5 March, and 26 March, Explorers I and III are still circling the earth at phenomenal speed, reporting data of significance to International Geophysical Year research. The Navy's Vanguard II, launched 17 March, completes the representation of the Free World aloft, with every prospect that these satellites will soon be joined by others designed to gather data on cosmic rays, geomagnetism, and the like.

ARPA SPELLS COORDINATION. On 7 February, one week after Explorer I was propelled into orbit, Secretary of Defense Neil H. McElroy announced establishment of an Advanced Research Projects Agency within the Department of Defense "for the direction and performance of certain advanced research and development projects." Roy W. Johnson, executive vice president of General Electric Company, was appointed Director, with Dr. Herbert F. York, of the University of California Radiation Laboratory, as Chief Scientist of the new agency.

Organized to provide centralized direction and control to projects which do not fall clearly within the responsibility of any one of the military services, the Agency will develop assigned programs in coordination with the military departments. As projects approach operational capability, they will be phased into operation of one or more of the military services, thus avoiding loss of time or interruption of development and production. Besides drawing on research and development facilities of government agencies and military departments, ARPA is authorized to enter into contracts with individuals, private business concerns, educational, research and scientific institutions. The Congress has

authorized transfer to the new agency of funds already appropriated for anti-missile missile and space projects.

NEW MISSILE COMMAND. Within the Army, coordination of the entire Army missile program has been accomplished with the establishment of the U. S. Army Ordnance Missile Command at Huntsville, Alabama, under Major General John B. Medaris, who formerly headed the Army Ballistic Missile Agency. The streamlined command structure insures that knowledge gained in developing one missile can be quickly applied to all other systems. *(See page 41.)*

SATELLITES & LUNAR PROBES. Among the first programs announced by the newly created ARPA is the launching of a number of small unmanned space vehicles, including additional earth satellites and other means to explore space in the vicinity of the moon. Authority to undertake one, and possibly two, lunar probes has been assigned to the Army Ballistic Missile Agency at Huntsville, Alabama. ABMA also is authorized to launch two, and possibly three, earth satellites, using modified Jupiter-C rockets. A program calling for three lunar probes has been assigned to the Air Force Ballistic Missile Division, which will use a Thor-Vanguard system with a third stage to be developed. The Naval Ordnance Test Station at Inyokern, California, will develop the mechanical ground scanning system for use with the lunar probes.

STRENGTH AND ORGANIZATION. The Army, which began Fiscal Year 1958 with actual strength of 997,079, adjusted its units and organization to keep within an established 900,000 strength ceiling, as of 30 June 1958. The number of active Army divisions was reduced from 18 to 15. Among major changes involved: The 1st Cavalry Division (Infantry) was withdrawn from Japan and replaced the 24th Infantry Division in Korea. The 2nd Infantry Division was withdrawn from Alaska and Fort Lewis, Washington, leaving two Battle Groups in Alaska. The 1st Armored Division was inactivated at Fort Polk, Louisiana, less one combat command. The 2d Infantry Division replaced the 10th Infantry Division at Fort Benning after the latter division returned from Europe in June 1958. The 24th Infantry Division is scheduled to replace the 11th Airborne Division in Germany early in Fiscal Year 1959. Meanwhile, all divisions were reorganized under the pentomic concept by Mid Fiscal Year 1958, six months ahead of schedule.

INTRODUCING TRAINFIRE. Conversion to the realistic Trainfire method of rifle training will be completed during Fiscal Year 1958 at nine stateside Army installations—Fort Jackson, South Carolina; Fort Benning, Georgia; Fort Carson, Colorado; Fort Dix, New Jersey; Fort Ord, California; Fort Knox, Kentucky; Fort Leonard Wood, Missouri; Fort Rucker, Alabama, and the U. S. Military Academy. Fort Jackson will serve as a pilot project for any changes to be implemented at other stations under supervision of Headquarters, U. S. Continental Army Command. During Fiscal Year 1959, fourteen additional Army installations will convert their ranges to simulate combat conditions by use of camouflaged, pop-up silhouette targets that fall when struck by a bullet.

EXERCISES PLANNED. Headquarters, Continental Army Command, which supervises and coordinates training of STRAC units, has scheduled a series of Fiscal Year 1959 field exercises to test mobility and operational readiness. Exercise Dark Cloud at Fort Campbell in November 1958 will provide combined unit training for the 101st Airborne Division. An Army-Navy amphibious exercise, Rocky Shoals, will be conducted by elements of 4th Infantry Division on 2-11 November near San Simeon, California.

Exercise Banyan Tree in January 1959 will see one battle group of 82d Airborne moving by air to Panama, where the men will participate in a jungle warfare exercise. During Exercise Caribou Creek in January-February 1959, one 1600-man battle group of the 101st Airborne Division will be airlifted to Alaska in an exercise emphasizing Arctic tactics and techniques. STRAC-EX in February 1959 will involve airlift of an advance STRAC command and communications group to Europe to demonstrate capabilities for speedy deployment. Operational readiness of 4th Infantry Division will be tested in Exercise Dry Hills in May 1959, to include an airlift of one battle group from Fort Lewis to the Yakima Maneuver Area, Washington.

VERSATILE AIRCRAFT. The Army of the future will have a new aircraft that will be able to take off and land like a helicopter but will operate in the air as a conventional airplane with long range and high speed. No airports or specialized take-off or landing equipment is required. The pilot simply rotates propeller ducts to a vertical position, then returns them to a horizontal position for forward flight. In landing, the procedure is reversed. The aircraft, powered by a T-53 shaft turbine engine, is being developed by the Doak Aircraft Company.

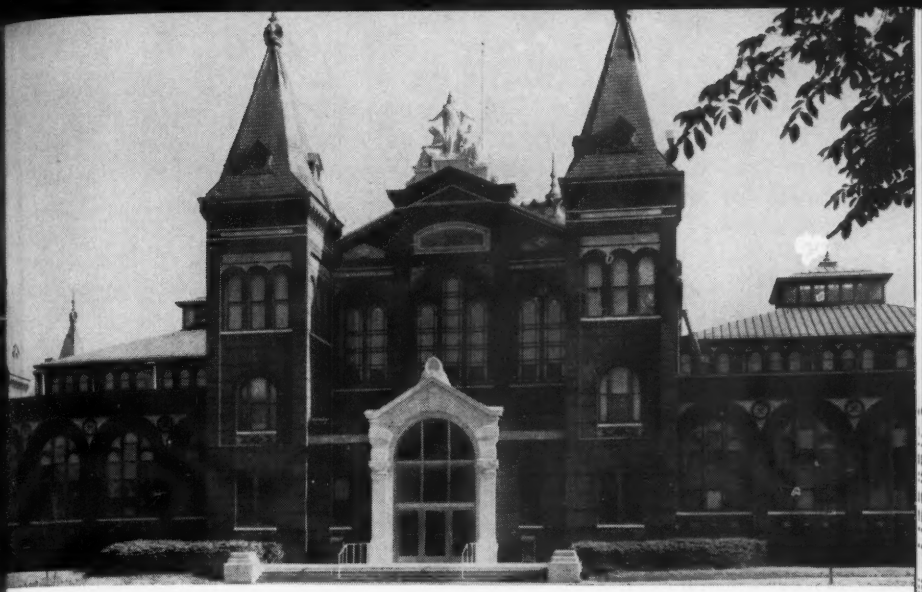
CORRECTION

THE JUNE ISSUE of ARMY INFORMATION DIGEST, the special issue on the Army and limited war entitled "Peace or Piecemeal," contains errata requiring correction in two places: On inside cover, line 1 should read: "Since World War II, besides Korea . . ." On page 3, line 21 should read: "Meanwhile, since World War II, besides Korea . . ."

For those who use the DIGEST for reference in the preparation of speeches and articles or for other information activities, the background data for both statements is as follows:

In addition to Korea, there have been some fourteen limited or small wars *since World War II*. These are the Indonesian War of 1945-47, the Chinese Civil War of 1945-49, the Indo-Chinese War of 1945-54, the Malayan War of 1945-54, the Communist Guerilla Warfare in Greece of 1946-49, the Kashmir Dispute between India and Pakistan of 1947-49, the Israeli-Arab League War of 1948-49, the Guatemala Revolt in 1954, the Argentine Revolt of 1955, the Algerian Insurrection of 1956, the Israeli Blitz of Gaza in 1956, the Anglo-French Seizure of Suez in 1956, the Russian Suppression of Hungary in 1956, and the conflict in Muscat and Oman in 1957.

Those who use the DIGEST for reference purposes are particularly cautioned to correct their copies so that errata will not be introduced into material for which the DIGEST is a source. The Editor regrets the error.



The Smithsonian Institution preserves the Army's past in a new

HALL OF MILITARY HISTORY

Edgar M. Howell

"The Hall of Military History is designed to depict for you the history and development of the United States Army in peace and war, its proud heritage in combat and its great contributions to the Nation in times of peace."

Inscription on Hall of Military History of the United States National Museum, Washington, D. C.

A MAJOR milestone in preserving the Army's proud past was reached on Flag Day—14 June—with the opening in Washington, D. C., of a new Hall of Military History in the Arts and Industries Building of the United States National Museum—better known to millions of visitors to the Nation's Capital as the Smithsonian Institution.

Designed for maximum impact on the two and one half million persons expected to visit it each year, the Hall traces chronologically the development and accomplishments of the Army from the Colonial Militia of the 17th Century armed with matchlock and flintlock muskets and halberds, to the Pentomic Army with its modern family of missile weapons.

EDGAR M. HOWELL is Curator, Division of Military History, United States National Museum, Washington, D. C.

The peacetime activities of the Army and their influence on the growth of the Nation from the explorations of Lewis, Clark, and Pike to the present-day development of our great natural resources by the Corps of Engineers are cast in their proper perspective in relation to combat operations. Specialized activities of the Technical Services not included in the chronological story are treated in a series of strictly topical exhibits, several constructed by the services themselves.

Although wholly a Smithsonian project, the planning and actual preparation of the Hall has been carried out in close, official cooperation with the Department of the Army through the Chief of Military History. Certain relics available in various Army collections, which were needed to round out the story, were transferred to the museum and much of the graphic material, including a series of dioramas, was furnished from Department of Defense sources.

UTILIZING the most modern exhibit techniques, the Smithsonian curators have told the Army's story simply but comprehensively through the medium of an unusually vivid selection of museum specimens, many of them unique in their rarity, tied into a coherent whole with graphic material, explanatory and transitional labels, and dioramas prepared by the U. S. Army Exhibit Unit.

This new approach to museum management is in marked contrast to the old method where a miscellany of curiosities was literally thrown into an exhibit case for the public to look at, digest if possible, and interpret as they might. The new Hall of Military History is designed not merely to display the Nation's treasures but to display them in such a manner as to give the average museum

Diorama depicts Battle of New Orleans in War of 1812 when British vainly assaulted the well-intrenched Americans under Andrew Jackson.

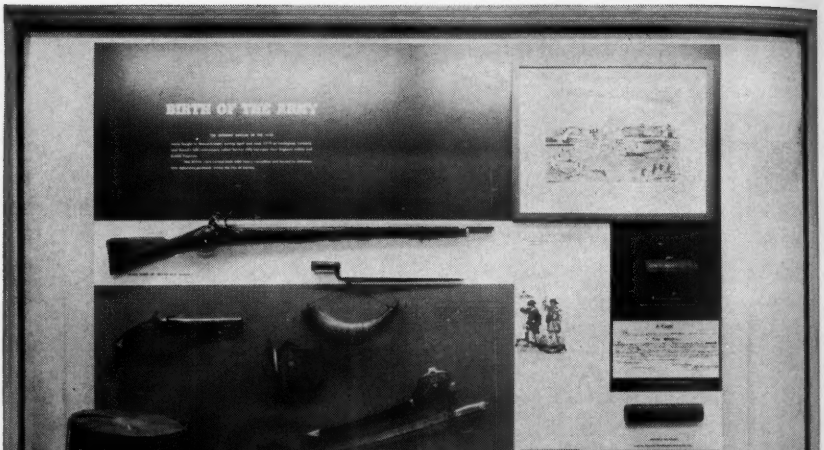
Building of the Panama Canal is reconstructed in a diorama that portrays graphically the gigantic task of the Corps of Engineers.

visitor a grasp of one aspect of American history and at the same time stir the interest of the specialist and the scholar and give them a point of departure for further investigation. This concept of museum treatment was pioneered by the Smithsonian and is currently being applied in all departments.

THE first exhibit confronting the visitor upon entering the Hall is particularly appropriate— General George Washington's uniform worn when he resigned his commission in 1783 and the sword he carried in battle throughout the Revolution. Unique in their rarity and almost perfect condition and easily ranking with the Star-Spangled Banner as two of the primary historic relics of our Nation's founding, they are flanked by the National Color and the new United States Army flag with its 145 campaign streamers.

With General George Washington, first Commander-in-Chief of the United States Army as a focal point, the chronological story is traced in a series of display panels running clockwise around the hall. The visitor is first taken in "flash-back" to the "Colonial Heritage of the Army" and its origins in the militia of the various colonies of pre-Revolutionary times. This is typified by two officer's gorgets of the period, a British officer's sword carried in the French and Indian War, a cannon ball and bayonet from Baddock's disastrous defeat on the Monongahela in 1755, a rare flintlock musket made during the reign of Queen Anne to arm Colonial militia, an Indian "peace medal," and other specimens.

The War of the Revolution is covered in a series of three panels and a diorama. The first of these, "The Birth of the Army," opens the story at Lexington and Concord and carries through Washington's appointment as Commander-in-Chief, the defeats at Long Island



Visitors will be able to see development of the U. S. Army from earliest times. Here one case displays Revolutionary War weapons.

and White Plains, and the disastrous retreat through New Jersey into Pennsylvania.

A diorama depicting the Battle of Trenton and a graphic representation of Burgoyne's defeat at Saratoga constitute the "Turning Points of the War," leading to the reaffirmation of the faith of the Colonies in the Army, the restoration of the Army's faith in itself, and the entry of France into the war on the side of the Colonies.

The latter two panels in the group, entitled "The Making of the Army" and "Victory with the Help of France" focus attention on Von Steuben's reorganization and training of the Army at Valley Forge and the decisive influence of Rochambeau's French Army on the Yorktown Campaign.

Outstanding in this group are a Colonial fife and drum, an unusually fine sword and hanger carried by Major General Richard Montgomery when he was killed in action in the attack on Quebec in December 1775, Washington's military spyglass, Baron De Kalb's war saddle, an original Von Steuben drill manual, a pair of rare flintlock pistols owned by General Charles Lee, and Rochambeau's sword.

Of especial interest to firearms collectors is a Committee of Safety rampart rifle made at the Rappahannock Forge. This weapon, one of four known examples, was transferred to the Smithsonian from the Rock Island Arsenal Museum.

The period 1784-1815, identified as "The Formative Years," is treated in one long panel and a d i o r a m a covering "The New Army"—the First American Regiment and the Legion—the epochal explorations of Lewis, Clark, and Zebulon Pike, and the War of 1812.

Here the visitor will see such rarities as a compass carried across the continent by Lewis and Clark, a small bronze howitzer used by Anthony Wayne in his campaigns against the Indians in the 1790's, the sword General Andrew Jackson carried through the War of 1812, and the uniform coat he wore at the Battle of New Orleans. The remainder of the chronology is covered in similar manner.

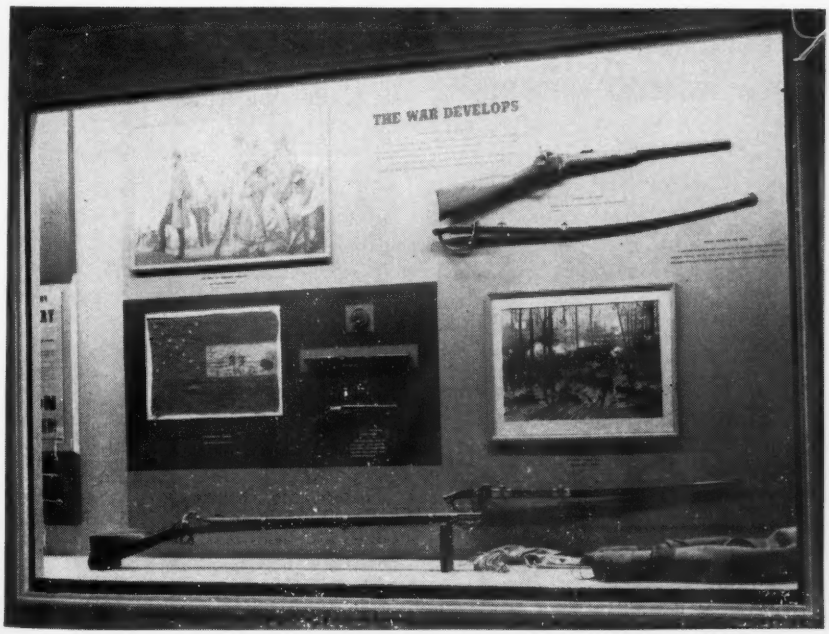
THROUGHOUT all of these panels, primary attention is paid to the development of the military musket and rifle, hand gun, and sword with representative selections from the National Arms Collection.

Added features in free-standing display cases include a selection of rare pre-Civil War and Civil War uniforms, a brief historical treatment of the U. S. Military Academy, the trunk of a 22-inch oak tree completely cut down by rifle fire at the Battle of Spotsylvania, a superbly executed model of a Civil War era 12-pounder field gun flanked by a 6-pounder and 12-pounder gun tubes manufactured in Confederate arsenals, and General Philip H. Sheridan's horse "Winchester" with original horse furniture.

MODERN ARMY REPRESENTED

IN A panel aptly titled "New Horizons," the Pentomic Army's modern family of missile weapons is covered, along with models of the Nike, Jupiter, Redstone, the Jupiter C and its fourth stage "Explorer" satellite. There are further exhibits on military heral-

Farther along, the Civil War displays show development of arms and equipment that occurred during the period 1861-65.



dry, unit colors and campaign and decoration streamers.

The central area of the Hall contains a series of exhibits on specialized activities of the Technical Services. The history of military transport from the ox-cart and sailing vessel of Revolutionary times to the latest developments in amphibious landing craft, aerial tramways, and the like is depicted in a vivid dioramic-type display constructed by the Transportation Corps. A similar exhibit of the Ordnance Corps shows the Army's modern family of ordnance.

SUPPLEMENTING the Hall, on the west gallery of the same building, is an extensive exhibit of firearms and edge weapons which traces the development of martial and sporting arms from medieval swords and 16th Century matchlock muskets through the semi-automatic and automatic weapons of today. Accompanying these is a representative selection of American military uniforms.

NEW MUSEUM BUILDING

THE Hall of Military History may be taken as an excellent sampling, if somewhat reduced in scope, of the military collections to be housed in the Smithsonian's new Museum of History and Technology—an entirely new building for which ground will be broken this summer.

When this greatly expanded exhibit space becomes available, the Division of Military History for the first time will be able to place before the public what is far and away the finest and most extensive series of military collections in America. The primary feature will be the chronological exhibit or Hall of Military History, similar in treatment to the present hall but on a much more elaborate scale.

Second only to this will be a sizable Hall of Ordnance tracing the development of weapons and armor from the stone age axe, through Roman and medieval armor, swords, and cross-bows, to our modern weapons systems. In tracing the influence of weapons on the course of our Nation's growth and development, exhibits will show, among other things, the evolution of the cavalry-armor arm from the organization of the Regiment of United States Dragoons in 1833 to modern armored vehicles.

Another hall will be devoted to military heraldry and medals, including the famous McKay Collection of Orders of Knighthood, the most valuable and extensive in existence. Two further halls will be devoted to military art and biography respectively.

An outstanding feature of the Museum of History and Technology, and one which the Smithsonian officials have sought for years, will be the extensive space available for reference and study collections. Once installed in this new building, the curators will be able to make any specimens readily available for research by qualified students of military arts, science and history in comfortable and suitable study rooms with specialists available to aid and advise. This is a proper function of a museum, the Smithsonian believes, and when ample space is provided in its new quarters, students of military history and others will rank it among the world's great institutions of higher learning.

U.S. ARMY ORDNANCE MISSILE COMMAND ESTABLISHED

STREAMLINING of the entire Army missile program has been accomplished with establishment on 31 March of the U. S. Army Ordnance Missile Command at Huntsville, Alabama. Major General John B. Medaris, who formerly headed the Army Ballistic Missile Agency at Huntsville, commands the new organization.

The new command, which has direct access to the Secretary of the Army and the Chief of Staff, integrates the various agencies or units that have been engaged in research, development, test and logistical support activities in ballistic and guided missiles for the Army. The resulting administrative streamlining will provide the means to carry out more effectively existing and future priority Army programs.

Now combined under the new Command are the Army Ballistic Missile Agency (including the Project Office at Cape Canaveral, Florida); the Jet Propulsion Laboratory at Pasadena, California; the Redstone Arsenal at Huntsville, (to be renamed the Army Rocket and Guided Missile Agency)*; and the integrated White Sands Proving Ground with the Army as executive agency.

With the integration of these primary research, development, test and logistical support installations under single direction, the new Command takes over responsibility and delegated authority for execution of the entire Ordnance mission with respect to guided missiles. This assigned responsibility includes design, development, procurement and production as well as supply, distribution and maintenance of assigned materiel.

Contracts in this field now will be placed, in accord with established Ordnance practices, through established local Ordnance procurement districts throughout the country. At the same time, the new Command will continue to look to American science and industry for their invaluable contributions in developing Army weaponry.

UNDER the new set-up, the *Army Ballistic Missile Agency* continues to be responsible for such ballistics weapons systems as Jupiter, Redstone and the newly authorized Pershing. Any space projects assigned to the Army, employing the Jupiter or Redstone systems, also will continue to be executed by this Agency.

The *Army Rocket and Guided Missile Agency* will be responsible

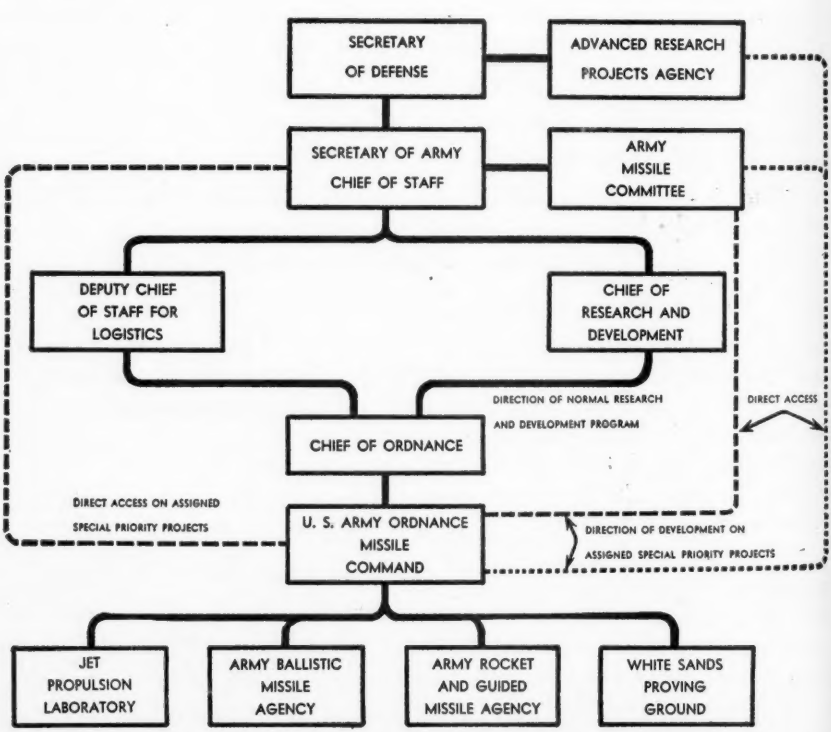
* The Army Rocket and Guided Missile Agency assumes the rocket-missile missions of the former Redstone Arsenal. The Arsenal continues as a Post command, reporting directly to Gen. Medaris, and is responsible for housekeeping services to ARGMA, ABMA, and also the Ordnance Guided Missile School, which is not under the Command.

for free rockets such as Honest John, and guided missiles such as the Dart anti-tank missile; for Lacrosse, the highly accurate guided missile; the Corporal and the Sergeant; surface-to-surface artillery; and the Nike family of antiaircraft guided weapons systems. Also included is the new Hawk low-level antiaircraft system soon to become operational. Portions of the anti-missile missile developments assigned by the Advanced Research Projects Agency, Department of Defense, also will come under ARGMA.

The *Jet Propulsion Laboratory* at Pasadena, California, is a government-owned, contract-operated Class II installation. The contractor is the California Institute of Technology, which has pioneered in the guided missile field since the early 1940's. The Laboratory developed the Corporal missile system, is currently working on development of the Sergeant, and was responsible for design, packaging and instrumentation of the Army-launched Explorer satellites. It also furnished the high-speed upper stages of the Jupiter-C.

At *White Sands Proving Ground,* integrated range facilities are provided for flight testing of missiles under development by all three services. The Proving Ground conducts laboratory tests of components of Army missile systems under development, and provides independent engineered testing of the completed systems prior to release to the intended user.

By combining these agencies in one command structure (*see chart*), the new organization will


SECRETARY OF DEFENSE
ADVANCED RESEARCH PROJECTS AGENCY
SECRETARY OF ARMY CHIEF OF STAFF
ARMY MISSILE COMMITTEE
DEPUTY CHIEF OF STAFF FOR LOGISTICS
CHIEF OF RESEARCH AND DEVELOPMENT
DIRECTION OF NORMAL RESEARCH AND DEVELOPMENT PROGRAM
DIRECT ACCESS
CHIEF OF ORDNANCE
DIRECT ACCESS ON ASSIGNED SPECIAL PRIORITY PROJECTS
U. S. ARMY ORDNANCE MISSILE COMMAND
DIRECTION OF DEVELOPMENT ON ASSIGNED SPECIAL PRIORITY PROJECTS
JET PROPULSION LABORATORY
ARMY BALLISTIC MISSILE AGENCY
ARMY ROCKET AND GUIDED MISSILE AGENCY
WHITE SANDS PROVING GROUND

bring together civilian and military specialists, university scientists, and special skills of industry in an integrated team to produce the Army's versatile family of guided missiles and rockets. Thus, the Army will assure that what is learned in developing one missile can be quickly applied to all.

Major General H. N. Toftoy, former Commanding General, Redstone Arsenal, becomes Deputy Commander of the new U. S. Army Ordnance Command. Heads of the subordinate agencies are: Brigadier General John A. Barclay, Army Ballistic Missile Agency; Major General Waldo E. Laidlaw, the integrated White Sands Proving Ground; Dr. William H. Pickering, Jet Propulsion Laboratory; and Brigadier General John G. Shinkle, Army Rocket and Guided Missile Agency.

The Commander of the U. S. Army Ordnance Missile Command will report directly to the Chief of Ordnance, under an organizational arrangement paralleling that of the Ordnance Weapons Command, Ordnance Tank-Automotive Command, and the Ordnance Ammunition Command.

Minute Measurements

IN AN ATTEMPT to settle a difference of one part in slightly over a billion between American and British measurement standards, the U. S. Army Signal Engineering Laboratories at Fort Monmouth, New Jersey, have shipped two atomic clocks known as Atomichrons to Britain for comparison.

The Atomic clock, with a possible accuracy of one part in 10 billion—equivalent in terms of time to one second per 300 years—utilizes the unvarying vibrations of the cesium atom to measure frequencies and time intervals. Last summer, however, it was discovered that the frequency of radio signals controlled by the cesium standard in England varied by nine parts in 10 billion from the frequency of similar U. S. equipment.

One of the atomichrons has been installed in the Guidance and Control Laboratory of the Army Ballistic Missile Agency, Huntsville, Alabama, where the extremely precise systems which steer the Army's giant rockets in flight are developed. Two others are used by the Missiles Firing Laboratory which launches Army rockets from the test center at Cape Canaveral. The device is made by National Company, Melrose, Mass.

A SENSITIVE infra-red "eye" that will detect evaporation from a small drop of toxic warfare agent in an average living room has been developed by the Chemical Corps and now is being field tested.

Known as LOPAIR (for long-path infra-red) the device will flash a warning light and sound a horn when a small amount of contaminant, even if colorless and invisible, crosses an invisible infra-red beam as much as a quarter of a mile away from the detector head.

The detector head, mounted on a tripod, contains the source of infra-red light and a mirror that directs the beam along the path, and a detector to analyze the beam when it returns. A second unit, which may also be tripod-mounted, is a special self-aligning mirror on the other end of the path which returns the beam to the detector.

Each unit can be carried by one man and the complete system set in operation in less than five minutes.

LOPAIR is expected to be of value in air pollution studies and industrial establishments. It was developed by scientists in the U. S. Army Chemical Warfare Laboratories working with the Farrand Optical Company of New York.

COMMAND LINE

ON SOVIET AGGRESSIVE TACTICS

"Since World War II the Soviets have shown great versatility and adaptability in applying techniques of political and military aggression without releasing general war. They have advanced their boundaries in eleven countries by an adroit combination of infiltration, subversion, coup d'etat, and direct military action. They have been willing to run risks at a time when the advantages of complete atomic monopoly were on our side. Since 1945 Soviet Russia has helped create and arm some ten national armies in allied countries—three in Asia and seven in Europe, and with these forces the Soviets and their allies have engaged in eight small wars. All this has been done without regard to the possible consequences of our superiority in nuclear weapons.

"Of late, relying on the impression created by their successes in the missile and satellite fields, they have shown a clear intention to push forward more aggressively and exploit the presumed higher level of acceptable provocation in the West."

General Maxwell D. Taylor, Army Chief of Staff, before the National Military-Industrial Conference, Chicago, Illinois, 19 February 1958.

ON LIMITED WAR

"The idea that we could safely concentrate our efforts solely upon preparations for a "big" war is completely fallacious. . . . It is noteworthy that while our atomic retaliatory capability has successfully prevented the outbreak of a big war, no less than 15 limited wars have disturbed the peace of the world since World War II!

"World tensions constantly tend to produce small conflicts which must be dealt with firmly and decisively before they have time to expand to disastrous proportions. The predominance of ground power in the Communists' military system gives them ample means to carry on local aggression against many nations. If we should be unprepared for limited war, we would be helpless to deal with attempted piecemeal conquest of the world except by precipitating the very atomic holocaust we are striving by every possible means to prevent."

The Honorable Wilber M. Brucker, Secretary of the Army, in an address before the General Federation of Women's Clubs, Washington, D. C., 9 October 1957

ON THE ARMY'S DETERRENT ROLE

"Because of the suicidal nature of general nuclear war, it appears increasingly unlikely that any nation will deliberately embark on such a war. However, that conclusion does not necessarily mean that international Communism will renounce armed aggression as a tool of policy. There is strong reason to feel that while avoiding general atomic war, Communism will incline toward limited aggression, infiltration, subversion, and the like—courses of action which appear as increasingly serious threats to world peace.

"These forms of aggression, if not arrested, may lead to the erosion of the Free World and to our loss, piecemeal, of that which we are pledged to defend. If resisted, they must be resisted promptly and successfully, for otherwise the contagion would spread. Consequently, immediately after the deterrence of general war I consider the mission of deterring, or winning quickly, any local aggression as an indispensable part of our security."

General Maxwell D. Taylor, Army Chief of Staff, before the National Military Industrial Conference, Chicago, Illinois, 19 February 1958.

EXCERPTS FROM RECENT PUBLIC STATEMENTS REFLECTING TOP-LEVEL ARMY POLICY AND THINKING ON SIGNIFICANT MATTERS OF ARMY CONCERN

MOBILITY AS DOCTRINE

"There is nothing new about the Army's interest in mobility. Historically, the United States Army has always based its philosophy of tactics upon the war of movement. Putting it another way, the dominant principle in our military doctrine has been, as it always must be, to emphasize that wars can only be won by offensive operations."

General Lyman L. Lemnitzer, Vice Chief of Staff,
before the Association of the U. S. Army
Battlefield Mobility Symposium,
Fort Benning, Georgia, 25 March 1958.

ON BEING READY FOR ANYTHING

"Our opponents are playing at a tough, dangerous game, one which they assuredly will win if we act from fear or timidity. It is imperative that we counter their toughness with tenacity, firmness and confidence. . . . We must stand ready to use force to counter force when to remain inactive would mean eventual complete defeat. This means we must be just as ready to use a unit of infantry as we are to deliver a hydrogen bomb. . . . It would be tragic indeed if, in concentrating our efforts in the field of long range missiles and defenses against them, we neglected what well may be the greatest threat of all. This is the threat of huge Communist ground armies using conventional means of war."

The Honorable George H. Roderick, Assistant Secretary of the Army,
in an address before the Military Government Association,
Boston, 7 December 1957.

ON THE ROLE OF THE READY RESERVE

"The planned role of the Ready Reserve in any future conflict is identical to the role of the active forces. A fundamental difference between the two is that the bulk of the active establishment will immediately engage in fighting, when necessary, whereas the Ready Reserve must be prepared to place its strength in action as early as possible after M-day or D-day.

We have long since passed the day when this nation can, in war, mobilize under the protective cover of fighting allies. Therefore, our reserve component forces must now acquire a higher degree of combat readiness than ever before if they are to be the decisive factor for victory that they have been in the past.

"In the future, in the case of the small war, the Ready Reserve will be available as units or individuals to fill gaps in the active services, provide trained loss replacements, and replace or supplement the strategic reserve in its role as a deterrent to the spread of the conflict.

"If the big war . . . should come, it may be expected that the manpower and production base of this nation will suffer thermonuclear attack. Chaotic conditions will prevail in the areas which have been hit.

"Whether the war be long or short, limited or general, conventional or atomic, the Ready Reserve will determine our ability to react quickly and to wage war over the long pull. The U. S. citizen-soldier for almost two centuries has proved to be the most versatile and adaptable fighting man of all time. . . . I am confident that he will be equal to the occasion in future war". . . .

The Honorable Hugh M. Milton II, Assistant Secretary of the Army,
(Manpower, Personnel and Reserve Forces),
before the Association of the United States Army,
Washington, D. C., 30 October 1957.

Secretary of the Army Wilber M. Brucker congratulates Dr. Siple during presentation of Distinguished Civilian Service Award.

ARMY ANTARCTIC EXPERT CITED

FOR his significant contribution throughout the past 20 years to scientific knowledge of the Antarctic region, Dr. Paul A. Siple was recently presented with the Department of Defense Distinguished Civilian Service Award — highest honor to be conferred on civilian employees by the Department.

Dr. Siple is Scientific Adviser to the Chief of Research and Development, Deputy Chief of Staff, Research and Development, Department of the Army. At a ceremony in the offices of Secretary of Defense Neil H. McElroy, five other employees of the Military Departments and the Office of the Secretary of Defense were given similar awards. Secretary of the Army Wilber M. Brucker made the presentation to Dr. Siple.

As a Sea Scout Dr. Siple made his first Antarctic voyage in 1929 with Admiral Richard E. Byrd. Last winter he led 17 Navy and civilian specialists in a full year of observation and study at the South Pole, making a major contribution to the International Geophysical Year. In his research, Dr. Siple spent four other winters in Antarctica.

The award to Dr. Siple read in part "Dr. Siple's extraordinary scientific and leadership ability and his willingness to perform duties under extremely hazardous and difficult conditions for long periods of time, have resulted in the development of scientific information concerning the Antarctic region of great importance to the defense of the United States and to the advancement of scientific knowledge."